LPDES PERMIT NO. LA0054828, AI No. 742

LPDES FACT SHEET and RATIONALE STATEMENT OF BASIS
FOR THE DRAFT LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM (LPDES) PERMIT TO DISCHARGE TO WATERS OF LOUISIANA

I. **Company/Facility Name:** Chemical Waste Management, Inc.
Lake Charles Facility
7170 John Brannon Road
Sulphur, Louisiana 70665

II. **Issuing Office:** Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services
Post Office Box 4313
Baton Rouge, Louisiana 70821-4313

III. **Prepared By:** Kevin Boesch/SAIC (EPA Contractor, Schedule Agreement GS-10F-0076J, Master Agreement 4/26/02)
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Date Prepared: September 30, 2004

IV. **Permit Action/Status:**

A. Reason For Permit Action:

Proposed reissuance of an expired National Pollutant Discharge Elimination System (NPDES) permit for a 5-year term following regulations promulgated at LAC 33:IX.2711/40 CFR 122.46*.

* In order to ease the transition from NPDES to LPDES permits, dual regulatory references are provided where applicable. The LAC references are the legal references while the 40 CFR references are presented for informational purposes only. In most cases, LAC language is based on and is identical to the 40 CFR language. 40 CFR Parts 401-402, and 404-471 have been adopted by reference at LAC 33:IX.4903 and will not have dual references. In addition, state standards (LAC Chapter 11) will not have dual references.

LAC 33:IX Citations: Unless otherwise stated, citations to LAC 33:IX refer to promulgated regulations listed at Louisiana Administrative Code, Title 33, Part IX.

40 CFR Citations: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations in accordance with the dates specified at LAC 33:IX.4901, 4903, and 2301.F.

B. LPDES permit - NPDES permit effective date: November 1, 1995
NPDES permit modification date (as LPDES permit): May 1, 1998
LPDES permit expiration date: October 31, 2000
EPA has not retained enforcement authority.

The LWDPS permit (WP0202) was terminated as part of the 1998 LPDES permit modification.

C. Application received on December 24, 2003 with additional information received August 30, 2004.

V. Facility Information:

A. Location - John Brannon Road approximately eight miles south of the City of Sulphur, Calcasieu Parish

B. Applicant Activity -

According to the application, Chemical Waste Management, Inc., Lake Charles Facility, is a hazardous and non-hazardous industrial liquid and solid waste management facility. The existing facility is expanding through the purchase of 410 acres adjacent to the existing property line.

The facility operates a hazardous and non-hazardous industrial waste treatment, storage, and disposal landfill consisting of active and closed landfill units along with a closed landfarm area, closed sanitary landfill, and the following facilities: sludge, liquid, and metals stabilization; aqueous treatment to solidify liquid wastes; drum storage, handling, and decanting; secure landfill; truck wash station; wheel wash station; wastewater storage tankage; weighing and sampling stations; bulk storage; laboratory facilities; heavy equipment maintenance shop; 10-day waste storage facility; and biotreatment pad.

Treated leachate generated from the landfills is disposed via injection wells. Vehicle wash water is collected and recycled or disposed via deep well injection. Wastewater discharged from the facility includes treated sanitary wastewater, treated pressure relief water from air stripping units, and potentially contaminated and uncontaminated stormwater runoff. Wastewaters are discharged to Bayou Choupique via local drainage from the facility site.

C. Technology Basis - (40 CFR Chapter 1, Subchapter N/Parts 401-402, and 404-471 have been adopted by reference at LAC 33:IX.4903)

Guideline	Reference
Landfills	40 CFR 445, Subparts A & B

Additional technology limitations established in this draft permit are based on best professional judgment (BPJ). The following guidelines were used in part as BPJ:

Guideline	Reference
Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF)	40 CFR 414, Subpart J
Inorganic Chemicals	40 CFR 415

Other sources of technology based limits:
LDEQ Stormwater Guidance, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6)
Louisiana Water Quality Management Plan for Sanitary Dischargers.
LDEQ Sanitary General Permits
Empirical limitations developed by LDEQ and EPA for hazardous waste sites

D. Fee Rate -
   1. Fee Rating Facility Type: major
   2. Complexity Type: VI
   3. Wastewater Type: II
   4. SIC code: 4953

E. Continuous Facility Effluent Flow - Discharges from the facility are intermittent in nature due to the effects of stormwater and the use of retention ponds.

VI. Receiving Waters: Bayou Choupique via local drainage

A. TSS (15%), mg/L: 5.75
B. Average Hardness, mg/L $CaCO_3$: 525.08
C. Critical Flow, cfs: 0.1
D. Harmonic Mean Flow, cfs: 0.3
E. River Basin: Calcasieu River, Segment No. 031001
F. Designated Uses:
   The designated uses are primary contact recreation, secondary contact recreation, and fish and wildlife propagation.

Information based on the following: Water Quality Management Plan, Volume 5A, 1994; LAC 33:IX Chapter 11; Recommendations from the Engineering Section. Hardness and 15% TSS data come from monitoring station No. 0849, on Louisiana State Highway 108 bridge, about 3.5 miles west of Louisiana State Highway 27, Carlyss and 5.9 miles NW of Burton

Landing which is about 10.1 miles SE of Vinton, Louisiana from the memo from George Chike, April 21, 2004.

VII. Outfall Information:

Outfall 001

A. Type of wastewater - Potentially contaminated stormwater runoff from closed land farm unit and soil stockpile areas.

B. Location - Sampling location is at the eastern side of the facility. Latitude 30°07'04", Longitude 93°23'57"

C. Treatment - Primary settling in retention pond.

D. Flow - Intermittent Flow (long-term average) 2.46 MGD.

E. Receiving waters - Bayou Choupique via local drainage

F. Basin and segment - Calcasieu River Basin, Segment 031001

G. Effluent Data - The effluent data are contained in Appendix C.

Outfall 002

A. Type of wastewater - Treated sanitary wastewater, treated pressure relief water from air stripping units, and potentially contaminated and uncontaminated stormwater runoff from process and non-process areas outside the active cells.

B. Location - Sampling location is at the eastern side of the facility. Latitude 30°06'51", Longitude 93°23'51"

C. Treatment - treatment of wastewaters consists of:
- stormwater: primary settling
- sanitary: aerobic biological treatment with chlorination
- pressure relief water: primary settling

D. Flow - Batch discharge (long-term average) 4.85 MGD.

E. Receiving waters - Bayou Choupique via local drainage

F. Basin and segment - Calcasieu River Basin, Segment 031001

G. Effluent Data - The effluent data are contained in Appendix C.

Outfalls 003, 006, 007, 008, 009, 010, 011, 012 and 015

A. Type of wastewater - Uncontaminated stormwater runoff from the following non-process areas:

003: lay down areas associated with the heavy equipment maintenance shop, the 10-day waste storage facility with truck/equipment parking, and other vegetated areas.
006, 007 and 008: closed sanitary landfill area in the northeast corner of the site.
009: heavy equipment outdoor storage area and area not associated with industrial activity.
010 and 011: area north of the heavy equipment shop and west of the bermed fuel storage area.
012: area south and east of heavy equipment shop.
015: main truck entrance area and eastern half of closed landfill Cell 5.

B. Location - Sample locations are at:

003: At the southeast edge of facility boundary
006 and 007: At the northwest edge of the facility boundary
008: At the northeast edge of the facility boundary
009, 010 and 011: At the southeast edge of the facility boundary
012 and 015: Southeast of the bioremediation unit at the east end of the facility

003: Latitude 30°06'51", Longitude 93°23'50"
006 and 007: Latitude 30°07'50", Longitude 93°24'04"
008: Latitude 30°07'30", Longitude 93°23'50"
009, 010 and 011: Latitude 30°06'58", Longitude 93°24'04"
012 and 015: Latitude 30°06'54", Longitude 93°24'04"

C. Treatment - None.

D. Flow - Intermittent Flow (long-term average):

003: 5.43 MGD	006: 0.39 MGD	007: 1.72 MGD
008: 1.44 MGD	009: 0.359 MGD	010: 0.626 MGD
012: 0.363 MGD	015: 3.06 MGD	

E. Receiving waters - Bayou Choupique via local drainage

F. Basin and segment - Calcasieu River Basin, Segment 031001

G. Effluent Data - The effluent data are contained in Appendix C.

Outfall 004A

A. Type of wastewater - Treated sanitary wastewater from the transfer facility, office building and shower facility on the east side of John Brannon Road.

B. Location - Sample location is in the southern portion of the facility on the east side of John Brannon Road.
Latitude 30°06'59", Longitude 93°24'04"

C. Treatment - Aerobic biological treatment with chlorination.

D. Flow - Continuous Flow (long-term average) 0.00025 MGD

E. Receiving waters - Bayou Choupique via local drainage

F. Basin and segment - Calcasieu River Basin, Segment 031001

G. Effluent Data - The effluent data are contained in Appendix C.

Outfall 004B

A. Type of wastewater - Treated sanitary wastewater from the Administrative Building.

B. Location - Sample location is in the northern portion of the facility and on the west side of John Brannon Road.
Latitude 30°07'15", Longitude 93°24'05"

C. Treatment - Aerobic biological treatment with chlorination.

D. Flow - Continuous Flow (long-term average) 0.003 MGD.

E. Receiving waters - Bayou Choupique via local drainage

F. Basin and segment - Calcasieu River Basin, Segment 031001

G. Effluent Data - The effluent data are contained in Appendix C.

Outfall 016

A. Type of wastewater - Treated sanitary wastewater, treated pressure relief water from air stripping units, and potentially contaminated and uncontaminated stormwater runoff from Cell 8 areas that are outside the active cell.

B. Location - At the southwest end of proposed Cell 8 at the *southwest edge of the facility.*
Latitude 30°6'31", Longitude 93°24'49"

C. Treatment - treatment of wastewaters will consist of:
- stormwater: primary settling
- sanitary: aerobic biological treatment with chlorination
- pressure relief water: primary settling

D. Flow - (long term average) 1.21 MGD (estimated flow reported on Form 2C, Item II.C).

E. Receiving waters - Bayou Choupique via local drainage

F. Basin and segment - Calcasieu River Basin, Segment 031001

G. Effluent Data - This is a proposed discharge, no data is available.

VIII. Proposed Permit Limits:

The specific effluent limitations and/or conditions will be found in the draft permit. Development and calculation of permit limits are detailed in the Permit Limit Rationale section below.

Summary of Proposed Changes From the Current LPDES Permit:

A. Outfall 001: More stringent technology-based limits are established for benzo(a)anthracene, di-n-butyl phthalate, and phenanthrene, based on 40 CFR Part 414, Subpart J applied as BPJ.

More stringent water-quality based limits are established for total cadmium, total copper, total lead, total mercury, total cyanide, benzene, bromodichloromethane, bromoform, carbon tetrachloride, dibromochloromethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,1,2,2-tetrachloroethane, tetrachloroethylene, 1,1,2-trichloroethane, vinyl chloride, benzidine, hexachlorobenzene, hexachlorobutadiene, aldrin, gamma-BHC (Lindane), chlordane, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dieldrin, alpha-endosulfan, beta-endosulfan, endosulfan sulfate, endrin, heptachlor, total PCBs, toxaphene, and 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD); a three-year compliance schedule is also *established for total cyanide.*

The applicant requested a reduction in monitoring frequency for all parameters to 1/year. This request is denied; however, monitoring frequencies are established at 1/6 months for TCDD, reduced from 1/day to 1/week for total cyanide and total phenols, and reduced from 1/month to 1/quarter for metals and other toxic organics, based on historical effluent data. A provision is also established allowing 1/quarter monitoring to be reduced to 1/6

months monitoring if there have been no exceedances after 18 consecutive months of quarterly monitoring.

B. Outfall 002: New technology-based limits are established for BOD_5, total suspended solids, ammonia-nitrogen, aniline, alpha-terpineol, benzoic acid, p-cresol and pyridine, based on 40 CFR Part 445, Subparts A and B, and (for BOD_5 and total suspended solids) the Class I sanitary general permit. Monitoring frequencies for these parameters are established at 1/day when discharging.

More stringent technology-based limits are established for benzo(a)anthracene, di-n-butyl phthalate, and phenanthrene, based on 40 CFR Part 414, Subpart J applied as BPJ.

More stringent water-quality based limits are established for total cyanide, bromodichloromethane, bromoform, dibromochloromethane, 4,4'-DDD, 4,4'-DDE, alpha-endosulfan, beta-endosulfan, endrin, 1,1,2,2 tetrachloroethane and tetrachloroethane; a three-year compliance schedule is also established for total cyanide.

The applicant requested a reduction in monitoring frequency for BOD_5, Total Suspended Solids, Oil and Grease, and Ammonia - Nitrogen (as N)to once a week. This request is denied; however, a provision is established allowing 1/day monitoring to be reduced to 1/week monitoring if there have been no exceedances after 12 consecutive months of monthly monitoring.

The applicant requested a reduction in monitoring frequency for all other parameters to once per year. This request is denied; however, monitoring frequencies are reduced from 1/day to 1/week for total cyanide and total phenols based on historical effluent data. Monitoring frequencies for metals and other toxic organics are retained at 1/month (with the exception of TCDD which is retained at 1/6 months) based on the variable nature of the discharge and the fact that this outfall drains active landfill waste handling and treatment areas; however, a provision is established allowing 1/month monitoring to be reduced to 1/quarter monitoring if there have been no exceedances after 12 consecutive months of monthly monitoring.

The applicant also requested a reduction in biomonitoring frequency to once per year. This request is denied. Biomonitoring frequencies are retained at 1/quarter based on the LDEQ Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards and EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies. The dilution series for biomonitoring is changed to 32%, 42%, 56%, 75% and 100% (100% critical dilution); samples shall now be combined (flow-weighted composite) with newly established Outfall 016.

C. Outfall 003, 005, 006, 007, 008, 009, 010, 011, 012, and 015: The applicant requested a reduction in monitoring frequency for all parameters to once per year. This request is denied; however, monitoring frequencies are reduced to 1/quarter for all parameters for each outfall, consistent with DEQ stormwater guidance.

D. Outfalls 004A and 004B: Limits for fecal coliform are established for sanitary waste in accordance with the Class 1 sanitary general permit. The applicant requested a reduction in monitoring frequency for all parameters to once per year. This request is denied; however, monitoring frequencies are reduced to 1/6 months for all parameters for each outfall, consistent with the Class I sanitary general permit.

E. Outfall 016: This outfall is newly established in the draft permit. Technology-based limits are established for BOD_5, total suspended solids, total organic carbon, oil and grease, ammonia, pH, metals and toxic organics based on a combination of 40 CFR Part 445, Subpart A, New Source Performance Standards, and BPJ, as detailed below and in Appendix A-3.

Water quality based limits are established for total cyanide, benzene, bromodichloromethane, bromoform, carbon tetrachloride, dibromochloromethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,1,2,2-tetrachloroethane, tetrachloroethylene, 1,1,2-trichloroethane, vinyl chloride, benzidine, hexachlorobenzene, hexachlorobutadiene, aldrin, gamma-BHC (Lindane), chlordane, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dieldrin, alpha-endosulfan, beta-endosulfan, endosulfan sulfate, endrin, heptachlor, total PCBs, toxaphene, and 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD).

Monitoring frequencies are established for BOD_5, total suspended solids, total organic carbon, oil and grease, ammonia and pH at 1/day when discharging; for total cyanide and total phenols at 1/week; for TCDD at 1/6 months; and for metals and other toxic organics at 1/month. A provision is also established allowing 1/month monitoring to be reduced to 1/quarter monitoring if there have been no exceedances after 12 consecutive months of monthly monitoring and 1/day monitoring to be reduced to 1/week monitoring for BOD_5, total suspended solids, total organic carbon, oil and grease, ammonia if there have been no exceedances after 12 consecutive months of monthly monitoring.

Freshwater chronic biomonitoring requirements are established for Ceriodaphnia dubia and Pimephales promelas at a frequency of 1/quarter. The dilution series for biomonitoring is 32%, 42%, 56%, 75% and 100% (100% critical dilution); samples shall be combined (flow-weighted composite) with Outfall 002.

F. The applicant has requested to increase permit limits for total copper and total mercury at Outfall 002, due to limitations of

analytical detection levels. This request is denied based on anti-backsliding requirements. However, Part II.I clarifies procedures for Discharge Monitoring Report (DMR) calculations and reporting requirements for analytical test results that are below minimum quantification levels.

IX. Permit Limit Rationale:

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under LAC 33:IX.2707/40 CFR Part 122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

A. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Following regulations promulgated at LAC 33:IX.2707.L.2.b/40 CFR Part 122.44(l)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to LAC 33:IX.2707.A/40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to LAC 33:IX.2707.D/40 CFR Part 122.44(d), whichever are more stringent.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations promulgated at LAC 33:IX.2707.A/40 CFR Part 122.44(a) require technology-based effluent limitations to be placed in LPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgement) in the absence of guidelines, or on a combination of the two. The following is a rationale for types of wastewaters. See outfall information descriptions for associated outfalls in Section VII.

1. Outfall 001 - Potentially contaminated stormwater runoff from closed land farm unit and soil stockpile areas.

Chemical Waste Management, Inc., Lake Charles Facility's discharge via Outfall 001 is not subject to technology-based effluent limitations guidelines for landfills promulgated at 40 CFR 445 since, in accordance with 40 CFR §445.1(b), these effluent limitations guidelines do not apply to wastewater discharges from land application or land treatment units (which would include land farms). Effluent limitations reflecting Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) are therefore developed based on BPJ, as discussed below.

Site-Specific Considerations

Potentially contaminated stormwater shall receive the following BPJ limitations in accordance with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).

Parameter	Monthly Average mg/L	Daily Maximum mg/L
Flow, MGD	Report	Report
TOC	N/A	50
Oil and Grease	N/A	15
pH, Std. Units	6.0 (min)	9.0 (max)

Additional technology-based limits for metals and toxic organics are BPJ based on the most stringent limits from the existing permit; LDEQ and EPA empirical effluent limitations for hazardous waste facilities; 40 CFR Part 414 - Organic Chemicals, Plastics And Synthetic Fibers Point Source Category, Subpart J - Direct Discharge Point Sources That Do Not Use End-of-Pipe Biological Treatment; and the Inorganic Chemical Development Document (ICDD) for 40 CFR 415. Concentration-based limits (daily maximum only) are applied due to the intermittent nature of the discharge. See Appendix A-1 for additional detail.

2. Outfall 002 - Treated sanitary wastewater, treated pressure relief water from air stripping units, and potentially contaminated and uncontaminated stormwater runoff from process and non-process areas outside the active cells.

Chemical Waste Management, Inc., Lake Charles Facility discharge via Outfall 002 is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

Manufacturing Operation	Guideline
Landfills	40 CFR Part 445, Subparts A and B

Additional effluent limitations reflecting Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) are developed based on BPJ, as discussed below.

Site-Specific Considerations

Chemical Waste Management, Inc. performs landfill waste handling and treatment activities (sludge, liquid and metals stabilization; aqueous treatment to solidify liquid wastes; biotreatment; drum storage, handling and decanting; weighing and sampling; bulk storage; truck and wheel washing) within the drainage area for Outfall 002. While wastewaters generated from these activities are not discharged, potentially contaminated stormwater from landfill waste handling and treatment areas is discharged and thus is subject

to effluent limitations guidelines promulgated at 40 CFR Part 445. Treated pressure relief water from air stripping units used to treat water collected from the lowest unit of some landfill cell liners is also discharged via Outfall 002, and is subject to effluent limitations guidelines promulgated at 40 CFR Part 445. Since both hazardous and non-hazardous landfill wastes are handled and treated within the drainage area for Outfall 002, both Subparts A and B of 40 CFR Part 445 apply to the discharge; the more stringent of these two sets of limits are applied in the draft permit.

Potentially contaminated stormwater shall receive the following BPJ limitations in accordance with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).

Parameter	Monthly Average mg/L	Daily Maximum mg/L
Flow, MGD	Report	Report
TOC	N/A	50
Oil and Grease	N/A	15
pH, Std. Units	6.0 (min)	9.0 (max)

Sanitary wastewater that is included as a part of other wastewater streams receives BPJ allocations for BOD_5 and TSS contributions to the other wastewaters at Appendix A-2. Due to the low volume of sanitary wastewater discharged (0.001 MGD), the intermittent nature of the discharge, and the use of chlorination and a retention pond, effluent limits for fecal coliform are not established in the draft permit.

Additional technology-based limits for metals and toxic organics are BPJ based on the most stringent limits from the existing permit; LDEQ and EPA empirical effluent limitations for hazardous waste facilities; 40 CFR Part 414 - Organic Chemicals, Plastics And Synthetic Fibers Point Source Category, Subpart J - Direct Discharge Point Sources That Do Not Use End-of-Pipe Biological Treatment; and the Inorganic Chemical Development Document (ICDD) for 40 CFR 415. *Concentration-based limits (daily maximum only) are applied due to the* intermittent nature of the discharge. See Appendix A-2 for additional detail.

3. Outfalls 003, 006, 007, 008, 009, 010, 011, 012 and 015 - Uncontaminated stormwater runoff from the following non-process areas:

003: lay down areas associated with the heavy equipment maintenance shop, the 10-day waste storage facility with truck/equipment parking, and other vegetated areas.
006, 007 and 008: closed sanitary landfill area in the northeast corner of the site.
009: heavy equipment outdoor storage area and area not associated with industrial activity.

010 and 011: area north of the heavy equipment shop and west of the bermed fuel storage area.
012: area south and east of heavy equipment shop.
015: main truck entrance area and eastern half of closed landfill Cell 5.

Uncontaminated stormwater runoff shall receive the following BPJ limitations in accordance with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).

Parameter	Monthly Average mg/L	Daily Maximum mg/L
Flow, MGD	Report	Report
TOC	N/A	50
Oil and Grease	N/A	15
pH, Std. Units	6.0 (min)	9.0 (max)

4. Outfalls 004A and 004B - Treated sanitary wastewater from:

004A: the transfer facility, office building and shower facility on the east side of John Brannon Road.
004B: the Administrative Building.

Sanitary wastewaters (internal or external) are regulated in accordance with LAC 33:IX.711 or 709.B, by BPJ utilizing the sanitary general permits issued by this Office, and the Louisiana Water Quality Management Plan, Appendices B (Areawide Sanitary Effluent Limits Policy) and C (Statewide Sanitary Effluent Limits Policy), as applicable. Concentration limits are used in accordance with LAC 33:IX.2709.F.1.b which states that mass limitations are not necessary when applicable standards and limitations are expressed in other units of measurement. LAC 33:IX.709.B references LAC 33:IX.711 which express BOD_5 and TSS in terms of concentration. Sanitary general permits are issued in classes according to the maximum expected facility flow ("X" = Amount of Flow). Applicant flow for Outfalls 004A and 004B of 0.001 MGD each are Class I discharges.

Future water quality studies may indicate potential toxicity from the presence of residual chlorine in the treatment facility's effluent. Therefore, the permittee is hereby advised that a future Total Residual Chlorine Limit may be required if chlorine is used as a method of disinfection. In many cases, this becomes a NO MEASURABLE Total Residual Chlorine Limit.

Class I, X <0.005 MGD, LAG 530000

Parameter	Monthly Average mg/L	Weekly Average mg/L
Flow, MGD	N/A	Report
BOD_5	N/A	45
TSS	N/A	45
Fecal Coliform, col/100 ml	N/A	400
pH, Std. Units	6.0 (min)	9.0 (max)

In addition, monthly average limits of 30 mg/L for BOD5 and TSS and 200 col/100 ml for fecal coliform are continued from the existing permit LA0054828.

5. Outfall 016 - Treated sanitary wastewater, treated pressure relief water from air stripping units, and potentially contaminated and uncontaminated stormwater runoff from Cell 8 areas that are outside the active cell.

This outfall is being newly constructed. Chemical Waste Management, Inc., Lake Charles Facility's discharge of potentially contaminated stormwater runoff from landfill waste handling areas via Outfall 016 is subject to New Source Performance Standards effluent limitation guidelines listed below:

Manufacturing Operation	Guideline
Landfills	40 CFR 445, Subpart A

Additional effluent limitations reflecting Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) are developed based on BPJ, as discussed below.

Site-Specific Considerations

Chemical Waste Management, Inc. will perform landfill waste handling activities within the drainage area for Outfall 016. While landfill wastewaters from the active cell and wastewaters generated from landfill waste handling activities will not be discharged, potentially contaminated stormwater from landfill waste handling areas will be discharged and thus is subject to effluent limitations guidelines promulgated at 40 CFR Part 445. Treated pressure relief water from air stripping units used to treat water collected from the lowest unit of some landfill cell liners will also be discharged via Outfall 016, and is subject to effluent limitations guidelines promulgated at 40 CFR Part 445. Since only hazardous landfill wastes will be handled within the drainage area for Outfall 016, only Subpart A of 40 CFR Part 445 applies to the discharge.

Potentially contaminated stormwater shall receive the following BPJ limitations in accordance with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).

Parameter	Monthly Average mg/L	Daily Maximum mg/L
Flow, MGD	Report	Report
TOC	N/A	50
Oil and Grease	N/A	15
pH, Std. Units	6.0 (min)	9.0 (max)

Sanitary wastewater that is included as a part of other wastewater streams receive BPJ allocations for BOD_5 and TSS contributions to the other wastewaters at Appendix A-3. Due to the low volume of sanitary wastewater discharged (0.001 MGD), the intermittent nature of the discharge, and the use of chlorination and a retention pond, effluent limits for fecal coliform are not established in the draft permit.

The facility has indicated in their permit application that the proposed discharge via Outfall 016 is anticipated to be similar in nature to the existing discharge via Outfall 002. Therefore, additional technology-based limits for metals and toxic organics are BPJ based on the most stringent limits from the existing permit for Outfall 002; LDEQ and EPA empirical effluent limitations for hazardous waste facilities; 40 CFR Part 414 - Organic Chemicals, Plastics And Synthetic Fibers Point Source Category, Subpart J - Direct Discharge Point Sources That Do Not Use End-of-Pipe Biological Treatment; and the Inorganic Chemical Development Document (ICDD) for 40 CFR 415. Concentration-based limits (daily maximum only) are applied due to the intermittent nature of the discharge. See Appendix A-3 for additional detail.

C. WATER QUALITY-BASED EFFLUENT LIMITATIONS

Technology-based effluent limitations were screened against state water quality numerical standard based limits by following guidance procedures established in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. Calculations, results, and documentation are given in Appendix B.

In accordance with 40 CFR § 122.44 (d)(1)/LAC 33:IX.2707.D.1, the existing (or potential) discharges were evaluated in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001, to determine whether pollutants would be discharged "at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." Calculations, results, and documentation are given in Appendix B.

The following pollutants received water quality based effluent limits:

Outfall 001:

Total Cadmium	Total Copper
Total Lead	Total Mercury
Total Cyanide	Benzene

Bromoform	Bromodichloromethane
Carbon Tetrachloride	Dibromochloromethane
1,2-Dichloroethane	1,1-Dichloroethylene
1,1,2,2-Tetrachloroethane	Tetrachloroethylene
1,1,2-Trichloroethane	Vinyl Chloride
Benzidine	Hexachlorobenzene
Hexachlorobutadiene	Aldrin
Gamma-BHC (Lindane)	Chlordane
4,4'-DDD	4,4'-DDE
4,4'-DDT	Dieldrin
alpha-Endosulfan	beta-Endosulfan
Endosulfan Sulfate	Endrin
Heptachlor	Total PCBs
Toxaphene	2,3,7,8-TCDD

Outfall 002:

Total Cyanide	Benzene [*1]
Bromoform	Bromodichloromethane
Carbon Tetrachloride [*1]	Dibromochloromethane
1,2-Dichloroethane [*1]	1,1-Dichloroethylene [*1]
1,3-Dichloropropylene [*1]	1,1,2,2-Tetrachloroethane
Tetrachloroethylene	1,1,2-Trichloroethane [*1]
Vinyl Chloride [*1]	Benzidine [*1]
Hexachlorobenzene [*1]	Hexachlorobutadiene [*1]
Aldrin [*2]	Gamma-BHC (Lindane) [*1]
Chlordane [*1]	4,4'-DDD
4,4'-DDE	4,4'-DDT [*1]
Dieldrin [*1]	alpha-Endosulfan
beta-Endosulfan	Endosulfan Sulfate [*1]
Endrin	Heptachlor [*1]
Total PCBs [*1]	Toxaphene [*1]
2,3,7,8-TCDD [*1]	

[*1] Water quality-based limit continued from existing permit LA0054828.

[*2] Existing permit limit is in error. Existing permit indicates the permit limit as 1 x 10^{-6} mg/L; correct water quality based permit limit is actually 1 x 10^{-5} mg/L. This technical error has been corrected in the draft permit.

Outfall 016:

Total Cyanide	Benzene
Bromoform	Bromodichloromethane
Carbon Tetrachloride	Dibromochloromethane
1,2-Dichloroethane	1,1-Dichloroethylene
1,1,2,2-Tetrachloroethane	Tetrachloroethylene
1,1,2-Trichloroethane	Vinyl Chloride
Benzidine	Hexachlorobenzene
Hexachlorobutadiene	Aldrin
Gamma-BHC (Lindane)	Chlordane
4,4'-DDD	4,4'-DDE
4,4'-DDT	Dieldrin

alpha-Endosulfan	beta-Endosulfan
Endosulfan Sulfate	Endrin
Heptachlor	Total PCBs
Toxaphene	2,3,7,8-TCDD

A review of effluent monitoring data for Outfalls 001 and 002 submitted by the permittee during the term of the current permit indicates that, with the exception of total cyanide, the permittee should be capable of meeting these water quality based effluent limits with their existing treatment systems. Thus, compliance schedules are included in the draft permit only for total cyanide at Outfalls 001 and 002. The permittee shall be required to comply with water quality based limits for Outfall 016 beginning upon the effective date of the permit, since the permittee will have the opportunity to install any necessary treatment prior to commencing discharge.

Calculated water quality based effluent limits for endosulfan are divided evenly between alpha-endosulfan, beta-endosulfan and endosulfan sulfate to ensure that the combined discharge of these forms of endosulfan will not violate water quality standards. For Outfall 002, the existing water quality based limit for endosulfan sulfate is more stringent than the calculated limit and thus is retained in the draft permit.

Minimum quantification levels (MQL's) for state water quality numerical standards-based effluent limitations are set at the values listed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. They are also listed in Part II of the permit.

Monitoring frequencies for water quality based limited parameters are established in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001.

TMDL Waterbody (Bayou Choupique via local drainage, Segment No. 031001, Calcasieu River Basin)

Outfall 001-003, 004A, 004B, 006-012, 015, 016

The discharges of treated sanitary wastewater, treated pressure relief water from air stripping units, and potentially contaminated and uncontaminated stormwater runoff from Outfalls 001-003, 004A, 004B, 006-012, 015, and 016 are to Bayou Choupique via local drainage, Segment No. 031001 of the Calcasieu River Basin.

Subsegment 031001 was previously listed as impaired for organic enrichment/low DO on past 303(d) lists, for which the below TMDL's have been developed. The Department of Environmental Quality reserves the right to impose more stringent discharge limitations and/or additional restrictions in the future to maintain the water quality integrity and the designated uses of the receiving water bodies based upon additional TMDL's and/or water quality

studies. The DEQ also reserves the right to modify or revoke and reissue this permit based upon any changes to established TMDL's for this discharge, or to accommodate for pollutant trading provisions in approved TMDL watersheds as necessary to achieve compliance with water quality standards.

The following TMDL's have been established for subsegment 031001:

TMDLs for Dissolved Oxygen for the Calcasieu Estuary, final July 1, 2002

Organic enrichment/low DO

This facility was not assigned a specific waste load allocation for oxygen-demanding pollutants such as biochemical oxygen demand (5-day) (BOD_5) or ammonia, nor were any necessary load reductions required of this point source. The TMDL determined that non-point sources and agriculture are primarily responsible for low DO conditions, and the TMDL identified necessary reductions to be made to non-point sources loadings. Therefore, only technology- or BPJ-based limits are placed in this permit, as appropriate.

Review of the permit application, current permit limits, and effluent analysis submitted showed oxygen-demanding pollutants at levels which would not cause, have the reasonable potential to cause or contribute to water quality impairment. Consequently, no additional water quality-based limits or requirements are added to the draft permit.

D. Biomonitoring Requirements

It has been determined that there may be pollutants present in the effluent which may have the potential to cause toxic conditions in the receiving stream. The State of Louisiana has established a narrative criteria which states, "toxic substances shall not be present in quantities that alone or in combination will be toxic to plant or animal life." The Office of Environmental Services requires the use of the most recent EPA biomonitoring protocols.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates both the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit for Outfalls 002 and 016 (combined as a flow-weighted composite) are as follows:

TOXICITY TESTS	FREQUENCY
Chronic static renewal 7-day survival and reproduction test using Ceriodaphnia dubia [Method 1002.0]	1/quarter

Chronic static renewal 7-day larval survival and growth test using fathead minnow (Pimephales promelas) [Method 1000.0]	1/quarter

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA/600/4-89/001, March 1989." The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge in accordance with regulations promulgated at LAC 33:IX.2715/40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be documented in a full report according to the test method publication mentioned in the previous paragraph. The permittee shall submit a copy of the first full report to the Office of Environmental Compliance. The full report and subsequent reports are to be retained for three (3) years following the provisions of Part III.C.3 of this permit. The permit requires the submission of certain toxicity testing information as an attachment to the Discharge Monitoring Report.

This permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body. Modification or revocation of the permit is subject to the provisions of LAC 33:IX.3105/40 CFR 124.5. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act.

Dilution Series

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 100%, 75%, 56%, 42%, and 32%. The low-flow effluent concentration (critical dilution) is defined as 100% effluent. Samples will be taken from the flow-weighted composite of Outfalls 002 and 016.

E. MONITORING FREQUENCIES

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [LAC 33:IX.2715/40 CFR 122.48(b)] and to assure compliance with permit limitations [LAC 33:IX.2707.I/40 CFR 122.44(i)]. The following section(s) explain the rationale for the monitoring frequencies stated in the draft permit.

1. Outfall 001 - Potentially contaminated stormwater runoff from closed land farm unit and soil stockpile areas.

The following conventional and non-conventional pollutants are to be monitored 1/day when discharging.

Parameters
Flow
TOC
Oil and Grease
pH

A monitoring frequency of 1/week for the following listed toxic pollutants is considered adequate for the protection of the receiving water and its designated uses as stated in Section VI.7.

Parameters
Total Phenols

Toxics with water quality based effluent limits listed in Section IX.C known to be in the discharge waters shall receive a monitoring frequency of 1/week.

Parameters
Total Cyanide

Toxic pollutants not expected to be on-site are proposed to be monitored once per quarter. The permittee requested to reduce the monitoring frequency to once per year for all required sampling for all outfalls at the facility. This request is denied due to the variable nature of the discharge; however, the permittee may apply for testing frequency reduction upon successful completion of the first 18 consecutive months of testing for those parameters requiring quarterly testing without exceedence of the permit limits. The frequency can be reduced to once per 6 months; however, if an exceedence occurs, testing frequency will return to once per quarter for 18 consecutive months without exceedence before eligible for testing frequency reduction.

2. Outfall 002 - Treated sanitary wastewater, treated pressure relief water from air stripping units, and potentially contaminated and uncontaminated stormwater runoff from process and non-process areas outside the active cells.

The following conventional and non-conventional pollutants are to be monitored 1/day when discharging.

Parameters
Flow
BOD_5
TSS
TOC

Oil and Grease
Ammonia-Nitrogen (as N)
pH

A monitoring frequency of 1/week for the following listed toxic pollutants is considered adequate for the protection of the receiving water and its designated uses as stated in Section VI.7.

Parameters
Total Phenols

Toxics with water quality based effluent limits listed in Section IX.C known to be in the discharge waters shall receive a monitoring frequency of 1/week.

Parameters
Total Cyanide

Toxic pollutants not expected to be on-site are proposed to be monitored once per month, with the exception of TCDD which shall be monitored once per six months. The permittee requested to reduce the monitoring frequency to once per year for all required sampling for all outfalls at the facility. This request is denied due to the variable nature of the discharge; however, the permittee may apply for testing frequency reduction upon successful completion of the first 12 consecutive months of testing for those parameters requiring monthly testing without exceedence of the permit limits. The frequency can be reduced to once per quarter; however, if an exceedence occurs, testing frequency will return to once per month for 12 consecutive months without exceedence before eligible for testing frequency reduction.

3. Outfalls 003, 006, 007, 008, 009, 010, 011, 012 and 015 - Uncontaminated stormwater runoff from the following non-process areas:

003: lay down areas associated with the heavy equipment maintenance shop, the 10-day waste storage facility with truck/equipment parking, and other vegetated areas.
006, 007 and 008: closed sanitary landfill area in the northeast corner of the site.
009: heavy equipment outdoor storage area and area not associated with industrial activity.
010 and 011: area north of the heavy equipment shop and west of the bermed fuel storage area.
012: area south and east of heavy equipment shop.
015: main truck entrance area and eastern half of closed landfill Cell 5.

Non-process area stormwater that is uncontaminated or has a low potential of contamination and is discharged at a discrete outfall, will receive monitoring frequencies according to the following schedule.

The following parameters will be monitored once per quarter:

Parameters
Flow
TOC
Oil & Grease
pH

4. Outfalls 004A and 004B - Treated sanitary wastewater from:

004A: the transfer facility, office building and shower facility on the east side of John Brannon Road.
004B: the Administrative Building.

For sanitary wastewater being discharged at discrete outfalls, the monitoring frequency of sanitary wastewater follows LDEQ's sanitary general permits which are based on flow ("X" = Amount of Flow). Applicant's flow for Outfall 004A and 004B of 0.001 MGD each are Class I discharges.

Class I, X <5,000 gpd - All parameters, once per 6 months

5. Outfall 016 - Treated sanitary wastewater, treated pressure relief water from air stripping units, and potentially contaminated and uncontaminated stormwater runoff from Cell 8 areas that are outside the active cell.

The following conventional and non-conventional pollutants are to be monitored 1/day.

Parameters
Flow
BOD_5
TSS
TOC
Oil and Grease
Ammonia-Nitrogen (as N)
pH

A monitoring frequency of 1/week for the following listed toxic pollutants is considered adequate for the protection of the receiving water and its designated uses as stated in Section VI.7.

Parameters
Total Phenols

Toxics with water quality based effluent limits listed in Section IX.C known to be in the discharge waters shall receive a monitoring frequency of 1/week.

Parameters
Total Cyanide

Toxic pollutants not expected to be on-site are proposed to be monitored once per month, with the exception of TCDD which shall be monitored once per six

months. The permittee requested to reduce the monitoring frequency to once per year for all required sampling for all outfalls at the facility. This request is denied due to the variable nature of the discharge; however, the permittee may apply for testing frequency reduction upon successful completion of the first 12 consecutive months of testing for those parameters requiring monthly testing without exceedence of the permit limits. The frequency can be reduced to once per quarter; however, if an exceedence occurs, testing frequency will return to once per month for 12 consecutive months without exceedence before eligible for testing frequency reduction.

X. Compliance History/DMR Review:

A. Compliance History

LDEQ records were reviewed for the period from January 2002 through March 2004. No records of enforcement actions were found.

B. DMR Review/Excursions

Based on a review of DMR data for the period from January 31, 2001 through December 31, 2003, the facility has had the following excursion:

Date	Parameter	Outfall	Reported Value	Permit Limits
04/02	pH	002	9.54 S.U. (Max)	9.0 S.U. (max)

The permit violation is an isolated event and no further permit action is taken.

XI. Endangered Species:

The receiving waterbody, Subsegment 031001 of the Calcasieu River Basin is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U.S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated October 21,2005 from Watson to Gautreaux (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

XII. Historic Sites:

The discharge will be from a proposed expansion of an existing facility. LDEQ has consulted with the State Historic Preservation Officer (SHPO) in a letter dated January 21, 2005 to determine whether construction-related activities could potentially affect sites or properties on or eligible for listing on the National Register of Historic Places. SHPO's response letter, dated February 10, 2005, stated that the facility as proposed will have no

potential effects.

XIII. Tentative Determination:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in the application.

XIV. Variances:

No requests for variances have been received by this Office.

XV. Public Notices:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the fact sheet. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

the LAKE CHARLES AMERICAN PRESS

Office of Environmental Services Public Notice Mailing List

Appendix A

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1)

Permittee:	Chemical Waste Management, Inc. - Lake Charles Facility
Permit Number:	LA0054828, AI 742
Scr.,old MM=1;MM,I=2;MM,J=3:	3
Scr..new MM,I=1;MM,J=2:	
ICDD Met;0=n,1=y Screen=2, 3	1
CWT GL;0=n,1=BAT,2=NSPS:	0
CWT Guidelines, Subpart A,B,C,D:	
Combustor G/L's, 1=BAT, 2=NSPS:	
Landfill GL;0=n,1=BAT,2=NSPS:	0
Landfill Subpart, Subpart A,B:	
Outfall number:	Out. 001
Appendix:	Appendix A-1
Mass, 1=y, 0=n:	0
Concentration, ug/L 1=y,0=n:	1
Outfall flow (MGD); []only:	
Average 0=n, 1=y:	0

(*3) Centralized Waste Treatment Guidelines:

BPT Citation=	---
BAT Citation=	---
Subpart =	---

(*4)

CWT Guideline Subpart:	Fraction of Total
A, Metals Treatment	---
B, Oils Treatment	---
C, Organics Treatment	---
Total	---

(*2)

PROCESS FLOW CALCULATION:	MGD	gpm
	2.46	
TOTAL PROCESS FLOW:	2.46	---
BPJ CONV. & NONCONV. FLOW ALLOCATION	MGD	gpm
TOTAL NON-PROCESS BPJ FLOW:	---	---
TOTAL FLOW:	2.46	---

(*5) Page Numbering and Labeling

Input Page, 1=y, 0=n	1
CWT Subpart Table, 1=y, 0=n	0
BOD,TSS,O&G,COD,TOCl=y, 0=n	0
Toxics & Others 1=y, 0=n	1
Report 1=y, 0=n	1

(*6)

Avg Screen Bas, 1=avg 0=max	0
Concentration flow, MGD	2.46
Avg. Empirical Nos. 1=y 0=n	1
Conc. based on proc.1=y,0=n	1
State BPJ, 1=T,2=T&W,0=n	0
State BPJ, Emp. Scr. 1=y	1

(*7)

Derivation of Daily Max/Daily Avg. Ratio (MAR)

Inputs:

Coeffecient of Variation, CV =

Samples per Month, n =

Z Factor: 99th percentile, Z99th =

Z Factor: 95th percentile, Z95th =

Maximum to Average Ratio = 1.458813

Maximum to Average Ratio Formula:

$$\frac{\exp(Z99th*(\ln(CV^2+1))^{0.5}-0.5*\ln(CV^2+1))}{\exp(Z95th*(\ln(CV^2/n+1))^{0.5}-0.5*\ln(CV^2/n+1))}$$

Defaults:

Coeffecient of Variation, CV	0.6
Samples per Month, n	1
Z Factor: 99th percentile, Z99th	2.326
Z Factor: 95th percentile, Z95th	1.645

(*8)

Conversions:

ug/L-->lbs/day:	0.00834
mg/L-->lbs/day:	8.34
gpm-->MGD	0.00144

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg mg/L	(*3) Empirical Max mg/L	(*4) OCPSFJ Avg mg/L	(*5) OCPSFJ Max mg/L	(*6) ICDD Met Avg mg/L	(*7) ICDD Met Max mg/L	(*8) CWT GL --- Avg mg/L	(*9) CWT GL --- Max mg/L	(*10) Tech Avg mg/L	(*11) Tech Max mg/L BPJ/BAT	(*12) Process/Out. 001 BPJ Flow (MGD)	(*13) Out. 001 Avg lbs/day	(*14) Out. 001 Max lbs/day	(*15) Conc. Out. 001 Flow (MGD)	(*16) Out. 001 Avg mg/L	(*17) Out. 001 Max mg/L
CONVENTIONAL POLLUTANTS																
BOD5	---	---	---	---	---	---	---	---	---	---		---	---		---	---
TSS	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Oil and Grease	---	---	---	---	---	---	---	---	---	15		---	---		---	15
NON-CONVENTIONAL POLLUTANTS BPJ										BPJ/BAT						
COD	---	---	---	---	---	---	---	---	---	---		---	---		---	---
TOC	---	---	---	---	---	---	---	---	---	50		---	---		---	50
Ammonia	---	---	---	---	---	---	---	---	---	---		---	---		---	---
PRIORITY TOXICS METALS AND CYANIDE	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	CWT GL ug/L	CWT GL ug/L	ug/L	ug/L	(MGD)	lbs/day	lbs/day	(MGD)	ug/L	ug/L
Total Antimony	---	600	---	---	426	759.2	---	---	---	290 (*1)		---	---		---	290
Total Arsenic	---	100	---	---	106.5	189.8	---	---	---	100		---	---		---	100
Total Beryllium	---	100	---	---	213	379.6	---	---	---	20 (*1)		---	---		---	20
Total Cadmium	---	100	---	---	213	379.6	---	---	---	40 (*1)		---	---		---	40
Total Chromium	---	150	1110	2770	266.3	474.5	---	---	---	80 (*1)		---	---		---	80
Total Copper	---	500	1450	3380	639	1138.8	---	---	---	500		---	---		---	500
Total Lead	---	150	320	690	213	379.6	---	---	---	140 (*1)		---	---		---	140
Total Mercury	---	10	---	---	72.4	129.1	---	---	---	10		---	---		---	10
Total Nickel	---	500	1690	3980	426	759.2	---	---	---	210 (*1)		---	---		---	210
Total Selenium	---	100	---	---	85.2	151.8	---	---	---	100		---	---		---	100
Total Silver	---	100	---	---	85.2	151.8	---	---	---	100		---	---		---	100
Total Thallium	---	100	---	---	426	759.2	---	---	---	70 (*1)		---	---		---	70
Total Zinc	---	1000	1050	2610	523.5	949	---	---	---	686 (*1)		---	---		---	686
Total Cyanide	---	100	420	1200	---	---	---	---	---	100		---	---		---	100

(*1) BPJ based on existing permit LA0054828, Outfall 001.

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSFJ Avg ug/L	(*5) OCPSFJ Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) CWT GL --- Avg ug/L	(*9) CWT GL --- Max ug/L	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/Out. 001 BPJ Flow (MGD)	(*13) Out. 001 Avg lbs/day	(*14) Out. 001 Max lbs/day	(*15) Conc. Flow (MGD)	(*16) Out. 001 Avg ug/L	(*17) Out. 001 Max ug/L
VOLATILE COMPOUNDS																
Acrolein	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Acrylonitrile	---	100	94	232	---	---	---	---	---	100		---	---		---	100
Benzene	---	100	57	134	---	---	---	---	---	44 [*1]		---	---		---	44
Bromoform	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Carbon Tetrachloride	---	100	142	380	---	---	---	---	---	28 [*1]		---	---		---	28
Chlorobenzene	---	100	142	380	---	---	---	---	---	28 [*1]		---	---		---	28
Chlorodibromomethane	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Chloroethane	---	100	110	295	---	---	---	---	---	25 [*1]		---	---		---	25
2-Chloroethyl Vinyl Ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Chloroform	---	100	111	325	---	---	---	---	---	16 [*1]		---	---		---	16
Dichlorobromomethane	---	100	---	---	---	---	---	---	---	100		---	---		---	100
1,1-Dichloroethane	---	100	22	59	---	---	---	---	---	47 [*1]		---	---		---	47
1,2-Dichloroethane	---	100	180	574	---	---	---	---	---	19 [*1]		---	---		---	19
1,1-Dichloroethylene	---	100	22	60	---	---	---	---	---	25 [*1]		---	---		---	25
1,2-trans-Dichloroethylene	---	100	25	66	---	---	---	---	---	16 [*1]		---	---		---	16
1,2-Dichloropropane	---	100	196	794	---	---	---	---	---	60 [*1]		---	---		---	60
1,3-Dichloropropylene	---	100	196	794	---	---	---	---	---	44 [*1]		---	---		---	44
Ethylbenzene	---	100	142	380	---	---	---	---	---	72 [*1]		---	---		---	72
Methyl Bromide	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Methyl Chloride	---	100	110	295	---	---	---	---	---	100		---	---		---	100
Methylene Chloride	---	100	36	170	---	---	---	---	---	89 [*1]		---	---		---	89
1,1,2,2-Tetrachloroethane	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Tetrachloroethylene	---	100	52	164	---	---	---	---	---	41 [*1]		---	---		---	41
Toluene	---	100	28	74	---	---	---	---	---	60 [*1]		---	---		---	60
1,1,1-Trichloroethane	---	100	22	59	---	---	---	---	---	54 [*1]		---	---		---	54
1,1,2-Trichloroethane	---	100	32	127	---	---	---	---	---	54 [*1]		---	---		---	54
Trichloroethylene	---	100	26	69	---	---	---	---	---	19 [*1]		---	---		---	19
Vinyl Chloride	---	100	97	172	---	---	---	---	---	100		---	---		---	100

[*1] BPJ based on existing permit LA0054828, Outfall 001.

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSF Avg ug/L	(*5) OCPSF Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) CWT GL --- Avg ug/L	(*9) CWT GL --- Max ug/L	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/Out. 001 BPJ Flow (MGD)	(*13) Out. 001 Avg lbs/day	(*14) Out. 001 Max lbs/day	(*15) Conc. Out. 001 Flow (MGD)	(*16) Out. 001 Avg ug/L	(*17) Out. 001 Max ug/L
ACID COMPOUNDS																
2-Chlorophenol	---	100	---	---	---	---	---	---	---	98 [*1]		---	---		---	98
2,4-Dichlorophenol	---	100	---	---	---	---	---	---	---	100		---	---		---	100
2,4-Dimethylphenol	---	100	19	47	---	---	---	---	---	27 [*1]		---	---		---	27
4,6-Dinitro-o-cresol	---	100	78	277	---	---	---	---	---	100		---	---		---	100
2,4-Dinitrophenol	---	100	1207	4291	---	---	---	---	---	100		---	---		---	100
2-Nitrophenol	---	100	65	231	---	---	---	---	---	36 [*1]		---	---		---	36
4-Nitrophenol	---	100	162	576	---	---	---	---	---	24 [*1]		---	---		---	24
Parachloromethacresol	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Pentachlorophenol	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Phenol	---	100	19	47	---	---	---	---	---	15 [*1]		---	---		---	15
2,4,6-Trichlorophenol	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Total Phenols	---	500	---	---	---	---	---	---	---	50 [*1]		---	---		---	50
BASE/NEUTRAL COMPOUNDS																
Acenaphthene	---	100	19	47	---	---	---	---	---	19 [*1]		---	---		---	19
Acenaphthylene	---	100	19	47	---	---	---	---	---	35 [*1]		---	---		---	35
Anthracene	---	100	19	47	---	---	---	---	---	19 [*1]		---	---		---	19
Benzidine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Benzo(a)anthracene	---	100	19	47	---	---	---	---	---	47		---	---		---	47
Benzo(a)pyrene	---	100	20	48	---	---	---	---	---	25 [*1]		---	---		---	25
3,4-Benzofluoranthene	---	100	20	48	---	---	---	---	---	25 [*1]		---	---		---	25
Benzo(ghi)perylene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Benzo(k)fluoranthene	---	100	19	47	---	---	---	---	---	25 [*1]		---	---		---	25
Bis(2-chloroethyl)ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Bis(2-chloroethoxy)methane	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Bis(2-chloroisopropyl)ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100

[*1] BPJ based on existing permit LA0054828, Outfall 001.

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSFJ Avg ug/L	(*5) OCPSFJ Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) CWT GL --- Avg ug/L	(*9) CWT GL --- Max ug/L	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/Out. 001 BPJ Flow (MGD)	(*13) Out. 001 Avg lbs/day	(*14) Out. 001 Max lbs/day	(*15) Conc. Out. 001 Flow (MGD)	(*16) Out. 001 Avg ug/L	(*17) Out. 001 Max ug/L
Bis(2-ethylhexyl)phthalate	---	100	95	258	---	---	---	---	---	100		---	---		---	100
4-Bromophenyl Phenyl Ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Butyl Benzyl Phthalate	---	100	---	---	---	---	---	---	---	100		---	---		---	100
2-Chloronaphthalene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
4-Chlorophenyl Phenyl Ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Chrysene	---	100	19	47	---	---	---	---	---	25 [*1]		---	---		---	25
Dibenzo(a,h)anthracene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
1,2-Dichlorobenzene	---	100	196	794	---	---	---	---	---	19 [*1]		---	---		---	19
1,3-Dichlorobenzene	---	100	142	380	---	---	---	---	---	19 [*1]		---	---		---	19
1,4-Dichlorobenzene	---	100	142	380	---	---	---	---	---	28 [*1]		---	---		---	28
3,3'-Dichlorobenzidine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Diethyl Phthalate	---	100	46	113	---	---	---	---	---	61 [*1]		---	---		---	61
Dimethyl Phthalate	---	100	19	47	---	---	---	---	---	10 [*1]		---	---		---	10
Di-n-butyl Phthalate	---	100	20	43	---	---	---	---	---	43		---	---		---	43
2,4-Dinitrotoluene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
2,6-Dinitrotoluene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Di-n-octyl Phthalate	---	100	---	---	---	---	---	---	---	100		---	---		---	100
1,2-Diphenylhydrazine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Fluoranthene	---	100	22	54	---	---	---	---	---	22 [*1]		---	---		---	22
Fluorene	---	100	19	47	---	---	---	---	---	19 [*1]		---	---		---	19
Hexachlorobenzene	---	100	196	794	---	---	---	---	---	19 [*1]		---	---		---	19
Hexachlorobutadiene	---	100	142	380	---	---	---	---	---	9 [*1]		---	---		---	9
Hexachlorocyclopentadiene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Hexachloroethane	---	100	196	794	---	---	---	---	---	16 [*1]		---	---		---	16
Indeno (1,2,3-cd) Pyrene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Isophorone	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Naphthalene	---	100	19	47	---	---	---	---	---	16 [*1]		---	---		---	16
Nitrobenzene	---	100	2237	6402	---	---	---	---	---	19 [*1]		---	---		---	19
N-Nitrosodimethylamine	---	100	---	---	---	---	---	---	---	100		---	---		---	100

[*1] BPJ based on existing permit LA0054828, Outfall 001.

Table 2 *Outf. 001*

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)
Parameter	Empirical	Empirical	OCPSFJ	OCPSFJ	ICDD Met	ICDD Met	CWT GL	CWT GL	Tech	Tech	Process/Out. 001	Out. 001	Out. 001	Conc.	Out. 001	Out. 001
	Avg	Max	Avg.	Max	Avg	Max	---	---	Avg	Max	BPJ Flow	Avg	Max	Flow	Avg	Max
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	Avg ug/L	Max ug/L	ug/L	ug/L	(MGD)	lbs/day	lbs/day	(MGD)	ug/L	ug/L
N-Nitrosodi-n-propylamine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
N-Nitrosodiphenylamine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Phenanthrene	---	100	19	47	---	---	---	---	---	47		---	---		---	47
Pyrene	---	100	20	48	---	---	---	---	---	19 [*1]		---	---		---	19
1,2,4-Trichlorobenzene	---	100	196	794	---	---	---	---	---	19 [*1]		---	---		---	19
PESTICIDES, PCB'S AND DIOXIN																
Aldrin	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Alpha-BHC	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Beta-BHC	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Gamma BHC (Lindane)	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Chlordane	---	10	---	---	---	---	---	---	---	10		---	---		---	10
4,4'-DDT	---	10	---	---	---	---	---	---	---	10		---	---		---	10
4,4'-DDE	---	10	---	---	---	---	---	---	---	10		---	---		---	10
4,4'-DDD	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Dieldrin	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Alpha-Endosulfan	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Beta-Endosulfan	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Endosulfan Sulfate	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Endrin	---	5	---	---	---	---	---	---	---	5		---	---		---	5
Endrin Aldehyde	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Heptachlor	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Heptachlor Epoxide	---	10	---	---	---	---	---	---	---	10		---	---		---	10
PCB's (Total)	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1016	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1221	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1232	---	5	---	---	---	---	---	---	---	5		---	---		---	5

[*1] BPJ based on existing permit LA0054828, Outfall 001.

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSFJ Avg. ug/L	(*5) OCPSFJ Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) CWT GL --- Avg ug/L	(*9) CWT GL --- Max ug/L	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/Out. 001 BPJ Flow (MGD)	(*13) Out. 001 Avg lbs/day	(*14) Out. 001 Max lbs/day	(*15) Conc. Out. 001 Flow (MGD)	(*16) Out. 001 Avg ug/L	(*17) Out. 001 Max ug/L
PCB-1242	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1248	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1254	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1260	---	5	---	---	---	---	---	---	---	5		---	---		---	5
Toxaphene	---	10	---	---	---	---	---	---	---	10		---	---		---	10
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	---	---	---	---	---	---	---	---	---	---		---	---		---	---
HERBICIDES																
2,4-Dichlorophenoxy-acteic Acid (2,4-D)	---	---	---	---	---	---	---	---	---	---		---	---		---	---
2,4,5-Trichlorophenoxy-propionic Acid (2,4,5-TP)	---	---	---	---	---	---	---	---	---	---		---	---		---	---
OTHER PARAMETERS																
METALS																
Barium	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Chromium VI	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Cobalt	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Manganese	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Molybdenum	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Tin	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Titanium	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Vanadium	---	---	---	---	---	---	---	---	---	---		---	---		---	---

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)
Parameter	Empirical	Empirical	OCPSFJ	OCPSFJ	ICDD Met	ICDD Met	CWT GL	CWT GL	Tech	Tech	Process/Out. 001	Out. 001		Conc. Out. 001		Out. 001
	Avg	Max	Avg.	Max	Avg	Max	---	---	Avg	Max	BPJ Flow	Avg	Max	Flow	Avg	Max
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	Avg	Max	ug/L	ug/L	(MGD)	lbs/day	lbs/day	(MGD)	ug/L	ug/L
OTHER ORGANICS																
Acetone	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Acetophone	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Aniline	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Alpha-terpineol	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Benzoic Acid	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Butanone	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Carbazole	---	---	---	---	---	---	---	---	---	---		---	---		---	---
n-Decane	---	---	---	---	---	---	---	---	---	---		---	---		---	---
n-Octadecane	---	---	---	---	---	---	---	---	---	---		---	---		---	---
o-Cresol	---	---	---	---	---	---	---	---	---	---		---	---		---	---
p-Cresol	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Pyridine	---	---	---	---	---	---	---	---	---	---		---	---		---	---
2-Butanone	---	---	---	---	---	---	---	---	---	---		---	---		---	---
2-Propane	---	---	---	---	---	---	---	---	---	---		---	---		---	---
2,3-Dichloroaniline	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Xylene	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Others																
Asbestos (fibers/L)	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Delta-BHC	---	10	---	---	---	---	---	---	---	10		---	---		---	10

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1)

Permittee:	Chemical Waste Management, Inc. - Lake Charles Facility
Permit Number:	LA0054828, AI 742
Scr.,old MM=1;MM,I=2;MM,J=3:	3
Scr.,new MM,I=1;MM,J=2:	
ICDD Met;0=n,1=y Screen=2, 3	1
CWT GL;0=n,1=BAT,2=NSPS:	0
CWT Guidelines, Subpart A,B,C,D:	
Combustor G/L's, 1=BAT, 2=NSPS:	
Landfill GL;0=n,1=BAT,2=NSPS:	1
Landfill Subpart, Subpart A,B:	a,b
Outfall number:	002
Appendix:	Appendix A-2
Mass, 1=y, 0=n:	0
Concentration, ug/L 1=y,0=n:	1
Outfall flow (MGD); []only:	
Average 0=n, 1=y:	0

(*2)

PROCESS FLOW CALCULATION:	MGD	gpm
	4.85	
TOTAL PROCESS FLOW:	4.85	---
BPJ CONV. & NONCONV. FLOW ALLOCATION	MGD	gpm
TOTAL NON-PROCESS BPJ FLOW:	---	---
TOTAL FLOW:	4.85	---

(*3) Landfill Guidelines

BPT Citation=	40 CFR 445.11 & 445.21
BAT Citation=	40 CFR 445.13 & 445.23
Subpart =	Subpt. A & B

(*4)

CWT Guideline Subpart:	Fraction of Total
A, Metals Treatment	---
B, Oils Treatment	---
C, Organics Treatment	---
Total	---

(*5) Page Numbering and Labeling

Input Page, 1=y, 0=n	1
CWT Subpart Table, 1=y, 0=n	0
BOD,TSS,O&G,COD,TOC1=y, 0=n	0
Toxics & Others 1=y, 0=n	1
Report 1=y, 0=n	1

(*6)

Avg Screen Bas, 1=avg 0=max	0
Concentration flow, MGD	4.85
Avg. Empirical Nos. 1=y 0=n	1
Conc. based on proc.1=y,0=n	1
State BPJ, 1=T,2=T&W,0=n	0
State BPJ, Emp. Scr. 1=y	1

(*7)

Derivation of Daily Max/Daily Avg. Ratio (MAR)

Inputs:

Coeffecient of Variation, CV =

Samples per Month, n =

Z Factor: 99th percentile, Z99th =

Z Factor: 95th percentile, Z95th =

Maximum to Average Ratio = 1.458813

Maximum to Average Ratio Formula:

$$\frac{\exp(Z99th*(\ln(CV^2+1))^{0.5} - 0.5*\ln(CV^2+1))}{\exp(Z95th*(\ln(CV^2/n+1))^{0.5} - 0.5*\ln(CV^2/n+1))}$$

Defaults:

Coeffecient of Variation, CV	0.6
Samples per Month, n	1
Z Factor: 99th percentile, Z99th	2.326
Z Factor: 95th percentile, Z95th	1.645

(*8)

Conversions:

ug/L-->lbs/day:	0.00834
mg/L-->lbs/day:	8.34
gpm-->MGD	0.00144

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)
Parameter	Empirical	Empirical	OCPSFJ	OCPSFJ	ICDD Met	ICDD Met	Land GL	Land GL	Tech	Tech	Process/002	002		Conc. 002	002	
	Avg	Max	Avg	Max	Avg	Max	Sub. A,B Avg	Sub. A,B Max	Avg	Max	BPJ Flow	Avg	Max	Flow	Avg	Max
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	(MGD)	lbs/day	lbs/day	(MGD)	mg/L	mg/L
CONVENTIONAL POLLUTANTS										BPJ/BAT						
BOD5	---	---	---	---	---	---	37	140	---	45 [*2]		---	---		---	45
TSS	---	---	---	---	---	---	27	88	---	45 [*2]		---	---		---	45
Oil and Grease	---	---	---	---	---	---	---	---	---	15		---	---		---	15
NON-CONVENTIONAL POLLUTANTS										BPJ/BAT						
Land GL																
COD	---	---	---	---	---	---	---	---	---	---		---	---		---	---
TOC	---	---	---	---	---	---	---	---	---	50		---	---		---	50
Ammonia	---	---	---	---	---	---	4.9	10	---	10		---	---		---	10
PRIORITY TOXICS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	Land GL ug/L	Land GL ug/L	ug/L	ug/L	(MGD)	lbs/day	lbs/day	(MGD)	ug/L	ug/L
METALS AND CYANIDE																
Total Antimony	---	600	---	---	426	759.2	---	---	---	290 [*1]		---	---		---	290
Total Arsenic	---	100	---	---	106.5	189.8	540	1100	---	61 [*1]		---	---		---	61
Total Beryllium	---	100	---	---	213	379.6	---	---	---	17 [*1]		---	---		---	17
Total Cadmium	---	100	---	---	213	379.6	---	---	---	17 [*1]		---	---		---	17
Total Chromium	---	150	1110	2770	266.3	474.5	460	1100	---	80 [*1]		---	---		---	80
Total Copper	---	500	1450	3380	639	1138.8	---	---	---	4 [*1]		---	---		---	4
Total Lead	---	150	320	690	213	379.6	---	---	---	14 [*1]		---	---		---	14
Total Mercury	---	10	---	---	72.4	129.1	---	---	---	0.04 [*1]		---	---		---	0.04
Total Nickel	---	500	1690	3980	426	759.2	---	---	---	14 [*1]		---	---		---	14
Total Selenium	---	100	---	---	85.2	151.8	---	---	---	100		---	---		---	100
Total Silver	---	100	---	---	85.2	151.8	---	---	---	100		---	---		---	100
Total Thallium	---	100	---	---	426	759.2	---	---	---	70 [*1]		---	---		---	70
Total Zinc	---	1000	1050	2610	523.5	949	110	200	---	95 [*1]		---	---		---	95
Total Cyanide	---	100	420	1200	---	---	---	---	---	100		---	---		---	100

*[*1] BPJ based on existing permit LA0054828, Outfall 002.* [*2] BPJ for sanitary wastewater, based on Class I sanitary general permit.

Table 2 002

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSFJ Avg ug/L	(*5) OCPSFJ Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) Land GL Sub. A,B Avg ug/L	(*9) Land GL Sub. A,B Max ug/L	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/002 BPJ Flow (MGD)	(*13) 002 Avg lbs/day	(*14) 002 Max lbs/day	(*15) Conc. 002 Flow (MGD)	(*16) 002 Avg ug/L	(*17) Max ug/L
VOLATILE COMPOUNDS																
Acrolein	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Acrylonitrile	---	100	94	232	---	---	---	---	---	100		---	---		---	100
Benzene	---	100	57	134	---	---	---	---	---	44 [*2]		---	---		---	44
Bromoform	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Carbon Tetrachloride	---	100	142	380	---	---	---	---	---	28 [*2]		---	---		---	28
Chlorobenzene	---	100	142	380	---	---	---	---	---	28 [*1]		---	---		---	28
Chlorodibromomethane	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Chloroethane	---	100	110	295	---	---	---	---	---	25 [*1]		---	---		---	25
2-Chloroethyl Vinyl Ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Chloroform	---	100	111	325	---	---	---	---	---	16 [*1]		---	---		---	16
Dichlorobromomethane	---	100	---	---	---	---	---	---	---	100		---	---		---	100
1,1-Dichloroethane	---	100	22	59	---	---	---	---	---	47 [*1]		---	---		---	47
1,2-Dichloroethane	---	100	180	574	---	---	---	---	---	19 [*2]		---	---		---	19
1,1-Dichloroethylene	---	100	22	60	---	---	---	---	---	25 [*2]		---	---		---	25
1,2-trans-Dichloroethylene	---	100	25	66	---	---	---	---	---	16 [*1]		---	---		---	16
1,2-Dichloropropane	---	100	196	794	---	---	---	---	---	60 [*1]		---	---		---	60
1,3-Dichloropropylene	---	100	196	794	---	---	---	---	---	44 [*2]		---	---		---	44
Ethylbenzene	---	100	142	380	---	---	---	---	---	72 [*1]		---	---		---	72
Methyl Bromide	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Methyl Chloride	---	100	110	295	---	---	---	---	---	100		---	---		---	100
Methylene Chloride	---	100	36	170	---	---	---	---	---	89 [*1]		---	---		---	89
1,1,2,2-Tetrachloroethane	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Tetrachloroethylene	---	100	52	164	---	---	---	---	---	41 [*2]		---	---		---	41
Toluene	---	100	28	74	---	---	---	---	---	60 [*1]		---	---		---	60
1,1,1-Trichloroethane	---	100	22	59	---	---	---	---	---	54 [*1]		---	---		---	54
1,1,2-Trichloroethane	---	100	32	127	---	---	---	---	---	54 [*2]		---	---		---	54
Trichloroethylene	---	100	26	69	---	---	---	---	---	19 [*1]		---	---		---	19
Vinyl Chloride	---	100	97	172	---	---	---	---	---	100		---	---		---	100

[*1] BPJ based on existing permit LA0054828, Outfall 002. [*2] BPJ based on existing permit LA0054828, Outfall 001.

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSFJ Avg ug/L	(*5) OCPSFJ Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) Land GL Sub. A,B Avg ug/L	(*9) Land GL Sub. A,B Max ug/L	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/002 BPJ Flow (MGD)	(*13) 002 Avg lbs/day	(*14) 002 Max lbs/day	(*15) Conc. 002 Flow (MGD)	(*16) 002 Avg ug/L	(*17) Max ug/L
ACID COMPOUNDS																
2-Chlorophenol	---	100	---	---	---	---	---	---	---	98 [*1]		---	---		---	98
2,4-Dichlorophenol	---	100	---	---	---	---	---	---	---	100		---	---		---	100
2,4-Dimethylphenol	---	100	19	47	---	---	---	---	---	27 [*1]		---	---		---	27
4,6-Dinitro-o-cresol	---	100	78	277	---	---	---	---	---	100		---	---		---	100
2,4-Dinitrophenol	---	100	1207	4291	---	---	---	---	---	100		---	---		---	100
2-Nitrophenol	---	100	65	231	---	---	---	---	---	36 [*1]		---	---		---	36
4-Nitrophenol	---	100	162	576	---	---	---	---	---	24 [*1]		---	---		---	24
Parachloromethacresol	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Pentachlorophenol	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Phenol	---	100	19	47	---	---	15	26	---	15 [*1]		---	---		---	15
2,4,6-Trichlorophenol	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Total Phenols	---	500	---	---	---	---	---	---	---	50 [*1]		---	---		---	50
BASE/NEUTRAL COMPOUNDS																
Acenaphthene	---	100	19	47	---	---	---	---	---	19 [*1]		---	---		---	19
Acenaphthylene	---	100	19	47	---	---	---	---	---	35 [*1]		---	---		---	35
Anthracene	---	100	19	47	---	---	---	---	---	19 [*1]		---	---		---	19
Benzidine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Benzo(a)anthracene	---	100	19	47	---	---	---	---	---	47		---	---		---	47
Benzo(a)pyrene	---	100	20	48	---	---	---	---	---	25 [*1]		---	---		---	25
3,4-Benzofluoranthene	---	100	20	48	---	---	---	---	---	25 [*1]		---	---		---	25
Benzo(ghi)perylene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Benzo(k)fluoranthene	---	100	19	47	---	---	---	---	---	25 [*1]		---	---		---	25
Bis(2-chloroethyl)ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Bis(2-chloroethoxy)methane	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Bis(2-chloroisopropyl)ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100

[*1] BPJ based on existing permit LA0054828, Outfall 002.

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSFJ Avg ug/L	(*5) OCPSFJ Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) Land GL Sub. A,B Avg ug/L	(*9) Land GL Sub. A,B Max ug/L	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/002 BPJ Flow (MGD)	(*13) 002 Avg lbs/day	(*14) 002 Max lbs/day	(*15) Conc. 002 Flow (MGD)	(*16) 002 Avg ug/L	(*17) Max ug/L
Bis(2-ethylhexyl)phthalate	---	100	95	258	---	---	---	---	---	100		---	---		---	100
4-Bromophenyl Phenyl Ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Butyl Benzyl Phthalate	---	100	---	---	---	---	---	---	---	100		---	---		---	100
2-Chloronaphthalene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
4-Chlorophenyl Phenyl Ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Chrysene	---	100	19	47	---	---	---	---	---	25 [*1]		---	---		---	25
Dibenzo(a,h)anthracene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
1,2-Dichlorobenzene	---	100	196	794	---	---	---	---	---	19 [*1]		---	---		---	19
1,3-Dichlorobenzene	---	100	142	380	---	---	---	---	---	19 [*1]		---	---		---	19
1,4-Dichlorobenzene	---	100	142	380	---	---	---	---	---	28 [*1]		---	---		---	28
3,3'-Dichlorobenzidine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Diethyl Phthalate	---	100	46	113	---	---	---	---	---	61 [*1]		---	---		---	61
Dimethyl Phthalate	---	100	19	47	---	---	---	---	---	10 [*1]		---	---		---	10
Di-n-butyl Phthalate	---	100	20	43	---	---	---	---	---	43		---	---		---	43
2,4-Dinitrotoluene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
2,6-Dinitrotoluene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Di-n-octyl Phthalate	---	100	---	---	---	---	---	---	---	100		---	---		---	100
1,2-Diphenylhydrazine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Fluoranthene	---	100	22	54	---	---	---	---	---	22 [*1]		---	---		---	22
Fluorene	---	100	19	47	---	---	---	---	---	19 [*1]		---	---		---	19
Hexachlorobenzene	---	100	196	794	---	---	---	---	---	19 [*2]		---	---		---	19
Hexachlorobutadiene	---	100	142	380	---	---	---	---	---	9 [*2]		---	---		---	9
Hexachlorocyclopentadiene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Hexachloroethane	---	100	196	794	---	---	---	---	---	16 [*1]		---	---		---	16
Indeno (1,2,3-cd) Pyrene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Isophorone	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Naphthalene	---	100	19	47	---	---	22	59	---	16 [*1]		---	---		---	16
Nitrobenzene	---	100	2237	6402	---	---	---	---	---	19 [*1]		---	---		---	19
N-Nitrosodimethylamine	---	100	---	---	---	---	---	---	---	100		---	---		---	100

[*1] BPJ based on existing permit LA0054828, Outfall 002. [*2] BPJ based on existing permit LA0054828, Outfall 001.

Table 2 002

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSFJ Avg. ug/L	(*5) OCPSFJ Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) Land GL Sub. A,B Avg ug/L	(*9) Land GL Sub. A,B Max ug/L	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/002 BPJ Flow (MGD)	(*13) 002 Avg lbs/day	(*14) 002 Max lbs/day	(*15) Conc. 002 Flow (MGD)	(*16) 002 Avg ug/L	(*17) Max ug/L
N-Nitrosodi-n-propylamine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
N-Nitrosodiphenylamine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Phenanthrene	---	100	19	47	---	---	---	---	---	47		---	---		---	47
Pyrene	---	100	20	48	---	---	---	---	---	19 [*1]		---	---		---	19
1,2,4-Trichlorobenzene	---	100	196	794	---	---	---	---	---	19 [*1]		---	---		---	19
PESTICIDES, PCB'S AND DIOXIN																
Aldrin	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Alpha-BHC	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Beta-BHC	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Gamma BHC (Lindane)	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Chlordane	---	10	---	---	---	---	---	---	---	10		---	---		---	10
4,4'-DDT	---	10	---	---	---	---	---	---	---	10		---	---		---	10
4,4'-DDE	---	10	---	---	---	---	---	---	---	10		---	---		---	10
4,4'-DDD	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Dieldrin	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Alpha-Endosulfan	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Beta-Endosulfan	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Endosulfan Sulfate	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Endrin	---	5	---	---	---	---	---	---	---	5		---	---		---	5
Endrin Aldehyde	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Heptachlor	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Heptachlor Epoxide	---	10	---	---	---	---	---	---	---	10		---	---		---	10
PCB's (Total)	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1016	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1221	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1232	---	5	---	---	---	---	---	---	---	5		---	---		---	5

[*1] BPJ based on existing permit LA0054828, Outfall 002.

Table 2 002

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSFJ Avg. ug/L	(*5) OCPSFJ Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) Land GL Sub. A,B Avg ug/L	(*9) Land GL Sub. A,B Max ug/L	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/002 BPJ Flow (MGD)	(*13) 002 Avg lbs/day	(*14) 002 Max lbs/day	(*15) Conc. 002 Flow (MGD)	(*16) 002 Avg ug/L	(*17) Max ug/L
PCB-1242	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1248	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1254	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1260	---	5	---	---	---	---	---	---	---	5		---	---		---	5
Toxaphene	---	10	---	---	---	---	---	---	---	10		---	---		---	10
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	---	---	---	---	---	---	---	---	---	---		---	---		---	---
HERBICIDES																
2,4-Dichlorophenoxy-acteic Acid (2,4-D)	---	---	---	---	---	---	---	---	---	---		---	---		---	---
2,4,5-Trichlorophenoxy-propionic Acid (2,4,5-TP)	---	---	---	---	---	---	---	---	---	---		---	---		---	---
OTHER PARAMETERS																
METALS																
Barium	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Chromium VI	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Cobalt	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Manganese	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Molybdenum	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Tin	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Titanium	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Vanadium	---	---	---	---	---	---	---	---	---	---		---	---		---	---

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSFJ Avg. ug/L	(*5) OCPSFJ Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) Land GL Sub. A,B Avg	(*9) Land GL Sub. A,B Max	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/002 BPJ Flow (MGD)	(*13) 002 Avg lbs/day	(*14) 002 Max lbs/day	(*15) Conc. 002 Flow (MGD)	(*16) 002 Avg ug/L	(*17) Max ug/L
OTHER ORGANICS																
Acetone	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Acetophone	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Aniline	---	100	---	---	---	---	15	24	---	24		---	---		---	24
Alpha-terpineol	---	---	---	---	---	---	16	33	---	33		---	---		---	33
Benzoic Acid	---	---	---	---	---	---	71	119	---	119		---	---		---	119
Butanone	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Carbazole	---	---	---	---	---	---	---	---	---	---		---	---		---	---
n-Decane	---	---	---	---	---	---	---	---	---	---		---	---		---	---
n-Octadecane	---	---	---	---	---	---	---	---	---	---		---	---		---	---
o-Cresol	---	---	---	---	---	---	---	---	---	---		---	---		---	---
p-Cresol	---	---	---	---	---	---	14	24	---	24		---	---		---	24
Pyridine	---	---	---	---	---	---	25	72	---	72		---	---		---	72
2-Butanone	---	---	---	---	---	---	---	---	---	---		---	---		---	---
2-Propane	---	---	---	---	---	---	---	---	---	---		---	---		---	---
2,3-Dichloroaniline	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Xylene	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Others																
Asbestos (fibers/L)	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Delta-BHC	---	10	---	---	---	---	---	---	---	10		---	---		---	10

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1)

Permittee:	Chemical Waste Management, Inc. - Lake Charles Facility
Permit Number:	LA0054828, AI 742
Scr.,old MM=1;MM,I=2;MM,J=3:	3
Scr.,new MM,I=1;MM,J=2:	
ICDD Met;0=n,1=y Screen=2, 3	1
CWT GL;0=n,1=BAT,2=NSPS:	0
CWT Guidelines, Subpart A,B,C,D:	
Combustor G/L's, 1=BAT, 2=NSPS:	
Landfill GL;0=n,1=BAT,2=NSPS:	2
Landfill Subpart, Subpart A,B:	a
Outfall number:	016
Appendix:	Appendix A-3
Mass, 1=y, 0=n:	0
Concentration, ug/L 1=y,0=n:	1
Outfall flow (MGD); []only:	
Average 0=n, 1=y:	0

(*2)

PROCESS FLOW CALCULATION:	MGD	gpm
	1.21	
TOTAL PROCESS FLOW:	1.21	---
BPJ CONV. & NONCONV. FLOW ALLOCATION	MGD	gpm
TOTAL NON-PROCESS BPJ FLOW:	---	---
TOTAL FLOW:	1.21	---

(*3) Landfill Guidelines

NSPS Citation=	40 CFR 445.14
Subpart =	Subpt. A

(*4)

CWT Guideline Subpart:	Fraction of Total
A, Metals Treatment	---
B, Oils Treatment	---
C, Organics Treatment	---
Total	---

(*5)

Page Numbering and Labeling	
Input Page, 1=y, 0=n	1
CWT Subpart Table, 1=y, 0=n	0
BOD,TSS,O&G,COD,TOC1=y, 0=n	0
Toxics & Others 1=y, 0=n	1
Report 1=y, 0=n	1

(*6)

Avg Screen Bas, 1=avg 0=max	0
Concentration flow, MGD	1.21
Avg. Empirical Nos. 1=y 0=n	1
Conc. based on proc.1=y,0=n	1
State BPJ, 1=T,2=T&W,0=n	0
State BPJ, Emp. Scr. 1=y	1

(*7)

Derivation of Daily Max/Daily Avg. Ratio (MAR)

Inputs:

Coeffecient of Variation, CV =

Samples per Month, n =

Z Factor: 99th percentile, Z99th =

Z Factor: 95th percentile, Z95th =

Maximum to Average Ratio = 1.458813

Maximum to Average Ratio Formula:

$$\frac{\exp(Z99th*(\ln(CV^2 + 1))^0.5 - 0.5*\ln(CV^2 + 1))}{\exp(Z95th*(\ln(CV^2/n + 1))^0.5 - 0.5*\ln(CV^2/n + 1))}$$

Defaults:

Coeffecient of Variation, CV	0.6
Samples per Month, n	1
Z Factor: 99th percentile, Z99th	2.326
Z Factor: 95th percentile, Z95th	1.645

(*8)

Conversions:

ug/L-->lbs/day:	0.00834
mg/L-->lbs/day:	8.34
gpm-->MGD	0.00144

Table 2 016

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg mg/L	(*3) Empirical Max mg/L	(*4) OCPSFJ Avg mg/L	(*5) OCPSFJ Max mg/L	(*6) ICDD Met Avg mg/L	(*7) ICDD Met Max mg/L	(*8) Land GL Subpt. A Avg mg/L	(*9) Land GL Subpt. A Max mg/L	(*10) Tech Avg mg/L	(*11) Tech Max mg/L	(*12) Process/016 BPJ Flow (MGD)	(*13) 016 Avg lbs/day	(*14) 016 Max lbs/day	(*15) Conc. 016 Flow (MGD)	(*16) 016 Avg mg/L	(*17) Max mg/L
CONVENTIONAL POLLUTANTS										BPJ/BAT						
BOD5	---	---	---	---	---	---	56	220	---	45 [*2]		---	---		---	45
TSS	---	---	---	---	---	---	27	88	---	45 [*2]		---	---		---	45
Oil and Grease	---	---	---	---	---	---	---	---	---	15		---	---		---	15
NON-CONVENTIONAL POLLUTANTS										BPJ/BAT						
Land GL																
COD	---	---	---	---	---	---	---	---	---	---		---	---		---	---
TOC	---	---	---	---	---	---	---	---	---	50		---	---		---	50
Ammonia	---	---	---	---	---	---	4.9	10	---	10		---	---		---	10
PRIORITY TOXICS METALS AND CYANIDE	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	Land GL ug/L	Land GL ug/L	ug/L	ug/L	(MGD)	lbs/day	lbs/day	(MGD)	ug/L	ug/L
Total Antimony	---	600	---	---	426	759.2	---	---	---	290 [*1]		---	---		---	290
Total Arsenic	---	100	---	---	106.5	189.8	540	1100	---	61 [*1]		---	---		---	61
Total Beryllium	---	100	---	---	213	379.6	---	---	---	17 [*1]		---	---		---	17
Total Cadmium	---	100	---	---	213	379.6	---	---	---	17 [*1]		---	---		---	17
Total Chromium	---	150	1110	2770	266.3	474.5	460	1100	---	80 [*1]		---	---		---	80
Total Copper	---	500	1450	3380	639	1138.8	---	---	---	4 [*1]		---	---		---	4
Total Lead	---	150	320	690	213	379.6	---	---	---	14 [*1]		---	---		---	14
Total Mercury	---	10	---	---	72.4	129.1	---	---	---	0.04 [*1]		---	---		---	0.04
Total Nickel	---	500	1690	3980	426	759.2	---	---	---	14 [*1]		---	---		---	14
Total Selenium	---	100	---	---	85.2	151.8	---	---	---	100		---	---		---	100
Total Silver	---	100	---	---	85.2	151.8	---	---	---	100		---	---		---	100
Total Thallium	---	100	---	---	426	759.2	---	---	---	70 [*1]		---	---		---	70
Total Zinc	---	1000	1050	2610	523.5	949	296	535	---	95 [*1]		---	---		---	95
Total Cyanide	---	100	420	1200	---	---	---	---	---	100		---	---		---	100

[*1] BPJ based on existing permit LA0054828, Outfall 002. [*2] BPJ for sanitary wastewater, based on Class I sanitary general permit.

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSFJ Avg ug/L	(*5) OCPSFJ Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) Land GL Subpt. A Avg ug/L	(*9) Land GL Subpt. A Max ug/L	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/016 BPJ Flow (MGD)	(*13) 016 Avg lbs/day	(*14) 016 Max lbs/day	(*15) Conc. 016 Flow (MGD)	(*16) 016 Avg ug/L	(*17) Max ug/L
VOLATILE COMPOUNDS																
Acrolein	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Acrylonitrile	---	100	94	232	---	---	---	---	---	100		---	---		---	100
Benzene	---	100	57	134	---	---	---	---	---	44 [*2]		---	---		---	44
Bromoform	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Carbon Tetrachloride	---	100	142	380	---	---	---	---	---	28 [*2]		---	---		---	28
Chlorobenzene	---	100	142	380	---	---	---	---	---	28 [*1]		---	---		---	28
Chlorodibromomethane	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Chloroethane	---	100	110	295	---	---	---	---	---	25 [*1]		---	---		---	25
2-Chloroethyl Vinyl Ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Chloroform	---	100	111	325	---	---	---	---	---	16 [*1]		---	---		---	16
Dichlorobromomethane	---	100	---	---	---	---	---	---	---	100		---	---		---	100
1,1-Dichloroethane	---	100	22	59	---	---	---	---	---	47 [*1]		---	---		---	47
1,2-Dichloroethane	---	100	180	574	---	---	---	---	---	19 [*2]		---	---		---	19
1,1-Dichloroethylene	---	100	22	60	---	---	---	---	---	25 [*2]		---	---		---	25
1,2-trans-Dichloroethylene	---	100	25	66	---	---	---	---	---	16 [*1]		---	---		---	16
1,2-Dichloropropane	---	100	196	794	---	---	---	---	---	60 [*1]		---	---		---	60
1,3-Dichloropropylene	---	100	196	794	---	---	---	---	---	44 [*2]		---	---		---	44
Ethylbenzene	---	100	142	380	---	---	---	---	---	72 [*1]		---	---		---	72
Methyl Bromide	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Methyl Chloride	---	100	110	295	---	---	---	---	---	100		---	---		---	100
Methylene Chloride	---	100	36	170	---	---	---	---	---	89 [*1]		---	---		---	89
1,1,2,2-Tetrachloroethane	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Tetrachloroethylene	---	100	52	164	---	---	---	---	---	41 [*2]		---	---		---	41
Toluene	---	100	28	74	---	---	---	---	---	60 [*1]		---	---		---	60
1,1,1-Trichloroethane	---	100	22	59	---	---	---	---	---	54 [*1]		---	---		---	54
1,1,2-Trichloroethane	---	100	32	127	---	---	---	---	---	54 [*2]		---	---		---	54
Trichloroethylene	---	100	26	69	---	---	---	---	---	19 [*1]		---	---		---	19
Vinyl Chloride	---	100	97	172	---	---	---	---	---	100		---	---		---	100

[*1] BPJ based on existing permit LA0054828, Outfall 002. [*2] BPJ based on existing permit LA0054828, Outfall 001.

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSFJ Avg ug/L	(*5) OCPSFJ Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) Land GL Subpt. A Avg ug/L	(*9) Land GL Subpt. A Max ug/L	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/016 BPJ Flow (MGD)	(*13) 016 Avg lbs/day	(*14) 016 Max lbs/day	(*15) Conc. 016 Flow (MGD)	(*16) 016 Avg ug/L	(*17) Max ug/L
ACID COMPOUNDS																
2-Chlorophenol	---	100	---	---	---	---	---	---	---	98 [*1]		---	---		---	98
2,4-Dichlorophenol	---	100	---	---	---	---	---	---	---	100		---	---		---	100
2,4-Dimethylphenol	---	100	19	47	---	---	---	---	---	27 [*1]		---	---		---	27
4,6-Dinitro-o-cresol	---	100	78	277	---	---	---	---	---	100		---	---		---	100
2,4-Dinitrophenol	---	100	1207	4291	---	---	---	---	---	100		---	---		---	100
2-Nitrophenol	---	100	65	231	---	---	---	---	---	36 [*1]		---	---		---	36
4-Nitrophenol	---	100	162	576	---	---	---	---	---	24 [*1]		---	---		---	24
Parachloromethacresol	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Pentachlorophenol	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Phenol	---	100	19	47	---	---	29	48	---	15 [*1]		---	---		---	15
2,4,6-Trichlorophenol	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Total Phenols	---	500	---	---	---	---	---	---	---	50 [*1]		---	---		---	50
BASE/NEUTRAL COMPOUNDS																
Acenaphthene	---	100	19	47	---	---	---	---	---	19 [*1]		---	---		---	19
Acenaphthylene	---	100	19	47	---	---	---	---	---	35 [*1]		---	---		---	35
Anthracene	---	100	19	47	---	---	---	---	---	19 [*1]		---	---		---	19
Benzidine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Benzo(a)anthracene	---	100	19	47	---	---	---	---	---	47		---	---		---	47
Benzo(a)pyrene	---	100	20	48	---	---	---	---	---	25 [*1]		---	---		---	25
3,4-Benzofluoranthene	---	100	20	48	---	---	---	---	---	25 [*1]		---	---		---	25
Benzo(ghi)perylene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Benzo(k)fluoranthene	---	100	19	47	---	---	---	---	---	25 [*1]		---	---		---	25
Bis(2-chloroethyl)ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Bis(2-chloroethoxy)methane	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Bis(2-chloroisopropyl)ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100

(*1) BPJ based on existing permit LA0054828, Outfall 002.

Table 2 016

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)
Parameter	Empirical	Empirical	OCPSFJ	OCPSFJ	ICDD Met	ICDD Met	Land GL	Land GL	Tech	Tech	Process/016	016		Conc. 016	016	
	Avg	Max	Avg	Max	Avg	Max	Subpt. A	Subpt. A	Avg	Max	BPJ Flow	Avg	Max	Flow	Avg	Max
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	Avg ug/L	Max ug/L	ug/L	ug/L	(MGD)	lbs/day	lbs/day	(MGD)	ug/L	ug/L
Bis(2-ethylhexyl)phthalate	---	100	95	258	---	---	---	---	---	100		---	---		---	100
4-Bromophenyl Phenyl Ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Butyl Benzyl Phthalate	---	100	---	---	---	---	---	---	---	100		---	---		---	100
2-Chloronaphthalene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
4-Chlorophenyl Phenyl Ether	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Chrysene	---	100	19	47	---	---	---	---	---	25 [*1]		---	---		---	25
Dibenzo(a,h)anthracene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
1,2-Dichlorobenzene	---	100	196	794	---	---	---	---	---	19 [*1]		---	---		---	19
1,3-Dichlorobenzene	---	100	142	380	---	---	---	---	---	19 [*1]		---	---		---	19
1,4-Dichlorobenzene	---	100	142	380	---	---	---	---	---	28 [*1]		---	---		---	28
3,3'-Dichlorobenzidine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Diethyl Phthalate	---	100	46	113	---	---	---	---	---	61 [*1]		---	---		---	61
Dimethyl Phthalate	---	100	19	47	---	---	---	---	---	10 [*1]		---	---		---	10
Di-n-butyl Phthalate	---	100	20	43	---	---	---	---	---	43		---	---		---	43
2,4-Dinitrotoluene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
2,6-Dinitrotoluene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Di-n-octyl Phthalate	---	100	---	---	---	---	---	---	---	100		---	---		---	100
1,2-Diphenylhydrazine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Fluoranthene	---	100	22	54	---	---	---	---	---	22 [*1]		---	---		---	22
Fluorene	---	100	19	47	---	---	---	---	---	19 [*1]		---	---		---	19
Hexachlorobenzene	---	100	196	794	---	---	---	---	---	19 [*2]		---	---		---	19
Hexachlorobutadiene	---	100	142	380	---	---	---	---	---	9 [*2]		---	---		---	9
Hexachlorocyclopentadiene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Hexachloroethane	---	100	196	794	---	---	---	---	---	16 [*1]		---	---		---	16
Indeno (1,2,3-cd) Pyrene	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Isophorone	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Naphthalene	---	100	19	47	---	---	22	59	---	16 [*1]		---	---		---	16
Nitrobenzene	---	100	2237	6402	---	---	---	---	---	19 [*1]		---	---		---	19
N-Nitrosodimethylamine	---	100	---	---	---	---	---	---	---	100		---	---		---	100

[*1] BPJ based on existing permit LA0054828, Outfall 002. [*2] BPJ based on existing permit LA0054828, Outfall 001.

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSFJ Avg. ug/L	(*5) OCPSFJ Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) Land GL Subpt. A Avg ug/L	(*9) Land GL Subpt. A Max ug/L	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/016 BPJ Flow (MGD)	(*13) 016 Avg lbs/day	(*14) 016 Max lbs/day	(*15) Conc. 016 Flow (MGD)	(*16) 016 Avg ug/L	(*17) Max ug/L
N-Nitrosodi-n-propylamine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
N-Nitrosodiphenylamine	---	100	---	---	---	---	---	---	---	100		---	---		---	100
Phenanthrene	---	100	19	47	---	---	---	---	---	47		---	---		---	47
Pyrene	---	100	20	48	---	---	---	---	---	19 [*1]		---	---		---	19
1,2,4-Trichlorobenzene	---	100	196	794	---	---	---	---	---	19 [*1]		---	---		---	19
PESTICIDES, PCB'S AND DIOXIN																
Aldrin	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Alpha-BHC	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Beta-BHC	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Gamma BHC (Lindane)	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Chlordane	---	10	---	---	---	---	---	---	---	10		---	---		---	10
4,4'-DDT	---	10	---	---	---	---	---	---	---	10		---	---		---	10
4,4'-DDE	---	10	---	---	---	---	---	---	---	10		---	---		---	10
4,4'-DDD	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Dieldrin	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Alpha-Endosulfan	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Beta-Endosulfan	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Endosulfan Sulfate	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Endrin	---	5	---	---	---	---	---	---	---	5		---	---		---	5
Endrin Aldehyde	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Heptachlor	---	10	---	---	---	---	---	---	---	10		---	---		---	10
Heptachlor Epoxide	---	10	---	---	---	---	---	---	---	10		---	---		---	10
PCB's (Total)	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1016	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1221	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1232	---	5	---	---	---	---	---	---	---	5		---	---		---	5

[*1] BPJ based on existing permit LA0054828, Outfall 002.

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSFJ Avg. ug/L	(*5) OCPSFJ Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) Land GL Subpt. A Avg ug/L	(*9) Land GL Subpt. A Max ug/L	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/016 BPJ Flow (MGD)	(*13) 016 Avg lbs/day	(*14) 016 Max lbs/day	(*15) Conc. 016 Flow (MGD)	(*16) 016 Avg ug/L	(*17) Max ug/L
PCB-1242	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1248	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1254	---	5	---	---	---	---	---	---	---	5		---	---		---	5
PCB-1260	---	5	---	---	---	---	---	---	---	5		---	---		---	5
Toxaphene	---	10	---	---	---	---	---	---	---	10		---	---		---	10
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	---	---	---	---	---	---	---	---	---	---		---	---		---	---
HERBICIDES																
2,4-Dichlorophenoxy-acteic Acid (2,4-D)	---	---	---	---	---	---	---	---	---	---		---	---		---	---
2,4,5-Trichlorophenoxy-propionic Acid (2,4,5-TP)	---	---	---	---	---	---	---	---	---	---		---	---		---	---
OTHER PARAMETERS																
METALS																
Barium	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Chromium VI	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Cobalt	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Manganese	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Molybdenum	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Tin	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Titanium	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Vanadium	---	---	---	---	---	---	---	---	---	---		---	---		---	---

Table 2 016

Calculation of Technology Based Limits for Chemical Waste Management, Inc. - Lake Charles Facility

(*1) Parameter	(*2) Empirical Avg ug/L	(*3) Empirical Max ug/L	(*4) OCPSFJ Avg. ug/L	(*5) OCPSFJ Max ug/L	(*6) ICDD Met Avg ug/L	(*7) ICDD Met Max ug/L	(*8) Land GL Subpt. A Avg	(*9) Land GL Subpt. A Max	(*10) Tech Avg ug/L	(*11) Tech Max ug/L	(*12) Process/016 BPJ Flow (MGD)	(*13) 016 Avg lbs/day	(*14) 016 Max lbs/day	(*15) Conc. 016 Flow (MGD)	(*16) 016 Avg ug/L	(*17) Max ug/L
OTHER ORGANICS																
Acetone	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Acetophone	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Aniline	---	100	---	---	---	---	15	24	---	24		---	---		---	24
Alpha-terpineol	---	---	---	---	---	---	19	42	---	42		---	---		---	42
Benzoic Acid	---	---	---	---	---	---	73	119	---	119		---	---		---	119
Butanone	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Carbazole	---	---	---	---	---	---	---	---	---	---		---	---		---	---
n-Decane	---	---	---	---	---	---	---	---	---	---		---	---		---	---
n-Octadecane	---	---	---	---	---	---	---	---	---	---		---	---		---	---
o-Cresol	---	---	---	---	---	---	---	---	---	---		---	---		---	---
p-Cresol	---	---	---	---	---	---	15	24	---	24		---	---		---	24
Pyridine	---	---	---	---	---	---	25	72	---	72		---	---		---	72
2-Butanone	---	---	---	---	---	---	---	---	---	---		---	---		---	---
2-Propane	---	---	---	---	---	---	---	---	---	---		---	---		---	---
2,3-Dichloroaniline	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Xylene	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Others																
Asbestos (fibers/L)	---	---	---	---	---	---	---	---	---	---		---	---		---	---
Delta-BHC	---	10	---	---	---	---	---	---	---	10		---	---		---	10

APPENDIX A-4 LA0054828, AI No. 742

Documentation and Explanation of Technology Calculations and Associated Lotus Spreadsheet

This is a technology spreadsheet covering the following three guidelines as applicable: 40 CFR 437, Centralized Waste Treatment, 40 CFR 444, and Landfills (hazardous and nonhazardous), 40 CFR 445.

Other guidelines/Best Professional Judgement (BPJ) will be included as the situation dictates. Many facilities were previously regulated using BPJ numbers (now BAT for those facilities) referred to as Empirical Numbers below. These numbers will usually have to be screened against the guidelines mentioned above. Regulations at 40 CFR 144(a)/LAC 33.IX.2707 require that technology-based permit limitations be placed in permits based on effluent limitations guidelines where applicable, on Best Professional Judgement (BPJ) in the absence of guidelines or on a combination of the two. Best Available Technology Economically Achievable (BAT) guideline factors and concentrations are used for conventional and non-conventional pollutants. In the absence of BAT, Best Conventional Pollutant Control Technology (BCT) is used for conventional and non-conventional pollutants. In the absence of either BAT or BCT, Best Practicable Control Technology (BPT) is used for conventional and non-conventional pollutants. BPT is used for conventional pollutants. New Source Performance Standards (NSPS) are used when a discharger is determined to be a new source. On 303(d) listed waterbodies where a Total Maximum Daily Load (TMDL) is scheduled for that waterbody, but not yet completed, emprical numbers shall apply if more stringent than guideline values (NSPS or BAT). Also, if the guideline lacks an oxygen demanding parameter, COD or TOC limitations may be applied to discharges to 303(d) listed waterbodies. In the absence of an applicable guideline for a particular parameter, BPJ shall be utilized. In the absence of an applicable guideline for a particular parameter, BPJ shall be utilized. The term, "monthly average" or "average", refers to the 30-day monthly average of daily maximum values, "daily maximum" or "maximum", refers to the maximum for any one day. The term, "previous permit," refers to the most recently issued NPDES or LPDES permit. If the previous permit did not give a BPJ allowance for particular wastewater, none will be granted in the reissuance in accordance with CWA 402(o), and 40 CFR 122.44.l/LAC 33.IX.2707.L. The spreadsheet is set up in a table and column/section format. Each table represents a general category for data input or calculation points. Each reference column or section is marked by a set of parentheses enclosing a number and asterisk, for example (*1) or (*10). These columns or sections represent inputs, existing data sets, calculation points, or results for determining technology based limits for an effluent of concern.

Table 1

Table 1 is a data input area, Sections (*1), (*2), (*4), (*6), and (*7). The Page and Table numbering sequence section, Section (*5) is used for applicable guideline(s) well as the generalized input information in Table 1. No inputs are necessary in Sections (*3) and (*8), as these are automatically generated, based on inputs in other Sections.

(*1) General input information:

Permittee: - permittee name.

Permit Number:- LPDES permit number.

Scr.,old MM=1;MM,I=2,;MM,J=3: - There are 3 options for this cell, "1" designates that only empirical values (See explanation for Column (*2) under Table 4 below) will be used, "2" indicates that the empirical values will be screened against (most stringent) the OCPSF guideline concentrations listed at 40 CFR 414, Subpart I, and "3" indicates that the empirical values will be screened (most stringent) against the OCPSF guideline concentrations listed at 40 CFR 414, Subpart J. This switch is commonly used when the facility had a previously issued permit containing empirical numbers.

Scr.,new MM,I=2,;MM,J=3: - There are 2 options for this cell, "1" indicates that empirical values will be used for a parameter only if the OCPSF guideline concentrations listed at 40 CFR 414, Subpart I (biological end-of-pipe treatment), do not regulate that parameter, "2" indicates that the empirical values will be used for a parameter only if the OCPSF guideline concentrations listed at 40 CFR 414, Subpart J (non-biological end-of-pipe treatment), do not regulate that parameter.

ICDD BAT Metals;0=n,1=y Screen =2, 3: - This is a screening designation switch for metals associated with the Inorganic Chemicals Development Document (ICDD). A "1" indicates that these limitations shall be utilized in the screening process. A"2" indicates that in the absence of an applicable guideline for a paramater; empirical values, OCPSF values, and ICDD values, which are based on BPJ for new facilities, shall be screened against each other with the minimum value being applied. If a parameter has an applicable guideline value, then that guideline value shall be applied. A "2" is only to be used in this field for new facilities or for facilities in which a previously issued permit used this same procedure in establishing limitations. A "3" is similar to a "2" except that in the absence of an applicable guideline for an organic pollutant, OCPSF guideline values shall be used per BPJ since this is a nationally promulgated guideline. If the parameter is not listed in the OCPSF guidelines, then the empirical value shall be used.

CWT GL;0=n,1=BAT,2=NSPS: - If the Centralize Waste Treatment guidelines at 40 CFR 437 apply to this facility (upon the final effective of the guidelines), then a "1" indicates that the BPT/BAT portion of the guidelines shall apply. A "2" indicates that NSPS shall apply.

CWT Guidelines, Subpart A,B,C: - The appropriate Centralized Waste Treatment subpart(s) are listed in this cell (upon the final effective of the guidelines). If more than one subpart applies, then each subpart is listed separated by a comma and no spaces.

Combustor G/L's;0=n,1=BAT, 2=NSPS: - If the Combustor guidelines at 40 CFR 444 apply to this facility, then a "1" indicates that the BPT/BAT portion of the guidelines shall apply. A "2" indicates that NSPS shall apply.

Landfill GL;0=n,1=BAT,2=NSPS: - If the Landfill guidelines at 40 CFR 444 apply to this facility, then a "1" indicates that the BPT/BAT portion of the guidelines shall apply. A "2" indicates that NSPS shall apply.

Outfall number:- Outfall number is placed in the designated cell, the default is "Out. 001", abbreviated due to space limitations in other portions of the spreadsheet.

Appendix:- Appendix designation for the header. "Appendix A-1" is the default.

Mass, 1=y, 0=n: - If mass-based limits are required, a "1" is placed in this cell.

Concentration, ug/L 1=y,0=n: - If concentration limits are required, a "1" is placed in this cell.

Outfall flow (MGD); []only: - If concentration limits are required, the appropriate outfall flow is placed in this cell. This cell is generally left blank or with a "0", since the default is the total continuous outfall flow from the facility. If an alternative flow is used to calculate concentration based limitations, that flow is placed in this cell.

Average 0=n, 1=y: - If monthly average limitations are desired, a "1" is placed in this cell.

(*2) Flow calculation section; the flow calculations are divided up into 2 categories, process and non-process flow. Flows can either be entered *as MGD or gpm units in the designated column.*

TOXIC PROCESS FLOW CALCULATION: - Process flow shall be that flow which receives a toxics allocation (per guideline and/or BPJ) regardless of whether it is generated by a "process" or not. This would include any leachate, incinerator scrub water, groundwater remediation water, decontamination pad washdown water, lab wastewater, etc. The process flow is used to calculate toxic limitations.

BPJ CONV. & NONCONV. FLOW ALLOCATION: - Additional flows such as utility, sanitary, and miscellaneous wastewaters are used in determining additional BPJ allocations for BOD_5 and TSS limitations, but not toxics. Miscellaneous wastewater includes, but is not limited to, wastewaters from tank farms or chemical storage areas or uncontaminated stormwater. Utility wastewater includes, but is not limited to, non-contact cooling tower blowdown, boiler blowdown, filter backwash, etc.

(*3) Citation section. If a guideline is being used, this section indicates the regulatory citation (BPT, BAT, or NSPS) for the guideline and subpart being used in the calculation of the technology limitations for the facility.

(*4) CWT Guideline Subpart: - CWT Subpart(s) are listed in this field.

(*5) Page Numbering and Labeling- This section shall be used for all guideline/BPJ calculations and combinations. The user can specify that the spreadsheet number the pages and tables in accordance with the guidelines/tables being used. Unused pages and tables are numbered "0". This section also controls the printing of the spreadsheet; non-numbered pages are not printed.

(*6) Specialty non-user section.

(*7) Derivation of Daily Max/Daily Avg. Ratio (MAR):- The empirical numbers discussed in Section (*1) were originally based on a daily maximum number. This section calculates a maximum to average ratio. The defaults are usually taken at the bottom, however, the user may input facility specific data under Inputs: at the top of the section. See Table 4, Column (*2).

(*8) Conversions:- common conversions used in spreadsheet calculations are included in this section.

Table 2

Table 2 is a selection table for the determination of applicable subpart(s) under the Centralized Waste Treatment guidelines.

(*1) Parameter- parameter listed under one or more subparts of the Centralized Waste Treatment guidelines.

(*2) Average BPT/BCT/BAT guideline, Subpart A, concentration value in mg/L.

(*3) Maximum BPT/BCT/BAT guideline, Subpart A, concentration value in mg/L.

(*4) Average NSPS, Subpart A, concentration value in mg/L.

(*5) Maximum NSPS, Subpart A, concentration value in mg/L.

(*6) Average BPT/BCT/BAT guideline, Subpart B, concentration value in mg/L.

(*7) Maximum BPT/BCT/BAT guideline, Subpart B, concentration value in mg/L.

(*8) Average NSPS, Subpart B, concentration value in mg/L.

(*9) Maximum NSPS, Subpart B, concentration value in mg/L.

(*10) Average BPT/BCT/BAT guideline, Subpart C, concentration value in mg/L.

(*11) Maximum BPT/BCT/BAT guideline, Subpart C, concentration value in mg/L.

(*12) Average NSPS, Subpart C, concentration value in mg/L.

(*13) Maximum NSPS, Subpart C, concentration value in mg/L.

(*14) Selected Subpart and associated average concentration values in mg/L for BOD_5, TSS, and Oil and Grease. Concentration values are in ug/L for the toxics.

(*15) Selected Subpart and associated maximum concentration values in mg/L for BOD_5, TSS, and Oil and Grease. Concentration values are in ug/L for the toxics.

Table 3

Table 3 is a calculation table for the pollutant loadings of BOD_5, TSS, and Oil and Grease, COD, TOC, and Ammonia utilizing guidelines and BPJ.

(*1) Source of flow:- Sources of flow are identified with two (2) broad categories, Process Sources and Non-process sources.

(*2) Average BOD_5, COD- Average BPT guideline concentrations in mg/L, or BPJ concentrations in mg/L.

(*3) Maximum BOD_5, COD- Maximum BPT guideline concentrations in mg/L, or BPJ concentrations in mg/L.

(*4) Average TSS, TOC- Average BPT guideline concentrations in mg/L, or BPJ concentrations in mg/L.

(*5) Maximum TSS, TOC- Maximum BPT guideline concentrations in mg/L, or BPJ concentrations in mg/L.

(*6) Average O&G, Ammonia- Average BPT guideline concentrations in mg/L, or BPJ concentrations in mg/L, for Oil and Grease and Ammonia.

(*7) Maximum O&G, Ammonia- Maximum BPT guideline concentrations in mg/L, or BPJ concentrations in mg/L, for Oil and Grease and Ammonia.

(*8) Process/BPJ Flow:- Flow from process areas and other BPJ sources as indicated. Units are in MGD.

(*9) Density Corr. factor- used in conjunction with flow (MGD) for converting mg/L to lbs per day, 8.34 lbs/gallon. Mg/L is assumed to be equivalent to ppm.

(*10) BOD_5, COD Average lbs/day- For guideline or BPJ/BAT (previous permit) allocations, the concentration in column (*2) is multiplied by the flow in column (*8), the density correction factor in column (*9) yielding a monthly average BOD_5/COD loading as applicable. The grand total is on the indicated row and this is the technology limit for Monthly Average BOD_5.

(*11) BOD_5, COD Maximum, lbs/day- Similar to column (*10). See column (*10).

(*12) TSS, TOC Average lbs/day- For guideline or BPJ/BAT (previous permit) allocations, the concentration in column (*4) is multiplied by the flow in column (*8), the density correction factor in column (*9) yielding a monthly average TSS/TOC loading as applicable. The grand total is on the indicated row and this is the technology limit for Monthly Average TSS/TOC.

(*13) TSS, TOC Maximum lbs/day- Similar to column (*12). See column (*12).

(*14) O&G, Ammonia Average lbs/day- For guideline or BPJ/BAT (previous permit) allocations, the concentration in column (*6) is multiplied by the flow in column (*8), the density correction factor in column (*9) yielding a monthly average O&G/Ammonia loading as applicable. The grand total is on the indicated row and this is the technology limit for Monthly Average O&G.

(*15) O&G, Ammonia Maximum lbs/day- Similar to column (*14). See column (*14).

Table 4

(*1) Parameter - parameter to be regulated. Since this spreadsheet covers several technology bases, several parameters will not have limitation calculations associated with them.

(*2) Empirical Avg - Empirical Daily Average in ug/L. When applicable, this is calculated using statistical procedures and the Empirical Daily Maximum data. The Empirical Daily Average is calculated as a fraction of the Empirical Daily Maximum. The Empirical Daily Maximum is established as the 99^{th} percentile of a lognormal distribution. The Empirical Daily Average is estimated at the 95^{th} percentile. The procedures are listed below:

Assumptions:
1) lognormal distribution
2) Coefficient of Variation (CV) is 0.60 or 60%

Variables:
1) Cp = Concentration of pollutant at p^{th} percentile
2) Cmean = Mean concentration
3) Zp = Normal distribution factor at p^{th} percentile (Z-score)

4) CV = coefficient of variation
5) σ^2 = variance (Normal Distribution),
σ = standard deviation (Normal Distribution

$Cp = Cmean * \exp(Zp * \sigma - 0.5 * \sigma^2)$

$\sigma^2 = \ln(CV^2 + 1)$

$\sigma^2 = \ln(0.6^2 + 1) = 0.3075$

$Z_{95} = 1.6452$
$Z_{99} = 2.3268$

$C_{95} = Cmean * \exp([1.6452] * [0.3075]^{1/2} - 0.5 * [0.3075])$
$C_{95} = Cmean * 2.135$
$C_{95}/Cmean = 2.135$
$C_{99} = Cmean * \exp([3.3268] * [0.3075]^{1/2} - 0.5 * [0.3075])$
$C_{99} = Cmean * 3.116$
$C_{99}/Cmean = 3.116$

ratio of daily average to daily max = $\frac{C_{95}/Cmean}{C_{99}/Cmean} = 0.6852$

(*3) Empirical Max - The Louisiana Department of Environmental Quality (LDEQ) and the Environmental Protection Agency (EPA) developed effluent limitations for hazardous waste facilities appropriate for all of the priority pollutants in the EPA Form 2C application in the early 1980's. It has been our policy to apply these limitations to active and abandoned hazardous waste sites in the absence of applicable guidelines. The limitations are technology based, but water quality considerations, prior to formal State water quality standards, played a significant role in developing the limits. Empirical data shows that advanced treatment can achieve these levels at small flows from numerous facilities. Units are in ug/L.

(*4) OCPSF(I/J) Avg - Monthly average concentrations based on OCPSF guidelines (40 CFR 414), Subpart I or J as indicated on Table 1. Technology-based effluent limitations for organics (OCPSF) were promulgated subsequent to the development of the empirical limitations in Column (*3). Technology transfer is appropriate for organics and metals. Although activated carbon adsorption can achieve much lower effluent limitations than the OCPSF, Subpart I guidelines, OCPSF technology-based limitations are supported as treatment technology since it has been duly promulgated, accepted nationally, and is generally the treatment technology of choice for economic reasons, especially for larger process streams. Units are in ug/L.

(*5) OCPSF(I/J) Max - Daily maximum concentrations based on OCPSF guidelines, Subpart I or J, as indicated on Table 1. Units are in ug/L.

(*6) ICDD Met Avg - Monthly average concentrations for metals based on the Inorganic Chemicals Development Document (ICDD), if selected on Page 1. Technology-based effluent limitations for metals and inorganics have been promulgated. Technology transfer is appropriate for metals. Where flow rates are high or quite variable, limits based on the ICDD technology for metals removal may be utilized.

(*7) ICDD Met Max - Daily maximum concentrations for metals based on the Inorganic Chemicals Development Document (ICDD), if selected in Table 1.

(*8) CWT GL/Comb GL/Land GL Avg - Monthly average value concentrations from the appropriately selected guideline in Table 1. Units are in mg/L for the Conventional and Non-conventional pollutants, and ug/L for the toxic pollutants.

(*9) CWT GL/Comb GL/Land GL Max - Daily maximum value concentrations from the appropriately selected guideline in Table 1. Units are in mg/L for the Conventional and Non-conventional pollutants, and ug/L for the toxic pollutants.

(*10) Tech Avg - Monthly average technology-based limitation. This is the most stringent of Columns (*2), (*4), (*6), and (*8) as appropriate. The one exception to this is, in some cases, an OCPSF number may be used in lieu of an empirical number (even though the empirical number may be more stringent) for a new facility, since the OCPSF number is more widely used and is nationally promulgated in 40 CFR 414. Units are in mg/L for the Conventional and Non-conventional pollutants, and ug/L for the toxic pollutants.

(*11) Tech Max - Daily maximum technology-based limitation. This is the most stringent of Columns (*3), (*5), (*7), and (*9) as appropriate. The one exception to this is, in some cases, an OCPSF number may be used in lieu of an empirical number (even though the empirical number may be more stringent) for a new facility, since the OCPSF number is more widely used and is nationally promulgated in 40 CFR 414. Units are in mg/L for the Conventional and Non-conventional pollutants, and ug/L for the toxic pollutants.

(*12) Process Flow - Process flow in MGD from Table 1.

(*13) Out. ??? Avg - Monthly average technology-based limitation in lbs/day. Values from Column (*10) are multiplied by the flow in Column (*12) and the appropriate density correction factor (8.34 or 0.00834) from Section (*8) in Table 1. "???" is the outfall number, e.g., 001, 101, etc.

(*14) Out. ??? Max - Daily maximum technology-based limitation in lbs/day. Values from Column (*11) are multiplied by the flow in Column (*12) and the appropriate density correction factor (8.34 or 0.00834) from Section (*8) in Table 1. "???" is the outfall number, e.g., 001, 101, etc.

(*15) Conc. Flow - Flow used when expressing effluent limitations in concentration from Section (*1) in Table 1. Units are in MGD.

(*16) Out. ??? Avg - Monthly average technology-based limitation in mg/L, Conventional and Nonconventional pollutants, and ug/L for toxic pollutants. A concentration limit can be calculated using the specified concentration flow from column (*15) in Table 1 the mass limitation calculated under column (*13), and the appropriate density correction factor. The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * (8.34 \text{ or } 0.00834)}$$

Utilizing 8.34 yields a limit in mg/L, using 0.00834 yields a limit in ug/L. This conversion is not necessary if no mass limits were calculated from the technology values in Column (*10). "???" is the outfall number, e.g., 001, 101, etc.

(*17) Out. ??? Max - Daily maximum technology-based limitation in mg/L, Conventional and Nonconventional pollutants, and ug/L for toxic pollutants. A concentration limit can be calculated using the specified concentration flow from column (*15) in Table 1 the mass limitation calculated under column (*14), and the appropriate density correction factor. The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * (8.34 \text{ or } 0.00834)}$$

Utilizing 8.34 yields a limit in mg/L, using 0.00834 yields a limit in ug/L. This conversion is not necessary if no mass limits were calculated from the technology values in Column (*11). "???" is the outfall number, e.g., 001, 101, etc.

Appendix B

Developer: Bruce Fielding Time: 03:36 PM

Software: Lotus 4.0 LA0054828, AI742

Revision date: 02/14/05

Water Quality Screen for Chemical Waste Management

Input variables:

Receiving Water Characteristics:

Receiving Water Name=	Bayou Choupique
Critical flow (Qr) cfs=	0.1
Harm. mean/avg tidal cfs=	0.3
Drinking Water=1 HHNPCR=2	
Marine, 1=y, 0=n	
Rec. Water Hardness=	525.08
Rec. Water TSS=	5.75
Fisch/Specific=1,Stream=0	
Diffuser Ratio=	

Effluent Characteristics:

Permittee=	*Chemical Waste Management*
Permit Number=	LA0054828, AI742
Facility flow (Qef),MGD=	2.46
Outfall Number =	001
Eff. data, 2=lbs/day	1
MQL, 2=lbs/day	1
Effluent Hardness=	N/A
Effluent TSS=	N/A
WQBL ind. 0=y, 1=n	
Acute/Chr. ratio 0=n, 1=y	0
Aquatic,acute only1=y,0=n	
Page Numbering/Labeling	
Appendix	Appendix B-1
Page Numbers 1=y, 0=n	1
Input Page # 1=y, 0=n	1
Fischer/Site Specific inputs:	
Pipe=1,Canal=2,Specific=3	
Pipe width, feet	
ZID plume dist., feet	
MZ plume dist., feet	
HHnc plume dist., feet	
HHc plume dist., feet	
Fischer/site specific dilutions:	
F/specific ZID Dilution =	---
F/specific MZ Dilution =	---
F/specific HHnc Dilution=	---
F/specific HHc Dilution=	---

Dilution:

ZID Fs =	0.1
MZ Fs =	1
Critical Qr (MGD)=	0.06463
Harm. Mean (MGD)=	0.19389
ZID Dilution =	0.99738
MZ Dilution =	0.9744
HHnc Dilution=	0.9744
HHc Dilution=	0.926941
ZID Upstream =	0.002627
MZ Upstream =	0.026272
MZhhnc Upstream=	0.026272
MZhhc Upstream=	0.078817
ZID Hardness=	---
MZ Hardness=	---
ZID TSS=	---
MZ TSS=	---

Multipliers:

WLAa --> LTAa	0.32
WLAc --> LTAc	0.53
LTA a,c-->WQBL avg	1.31
LTA a,c-->WQBL max	3.11
LTA h --> WQBL max	2.38
WQBL-limit/report	2.13
WLA Fraction	1
WQBL Fraction	1

Conversions:

ug/L-->lbs/day Qef	0.020516
ug/L-->lbs/day Qeo	0
ug/L-->lbs/day Qr	0.000834
lbs/day-->ug/L Qeo	48.74149
lbs/day-->ug/L Qef	48.74149
diss-->tot 1=y0=n	1
Cu diss->tot1=y0=n	1
cfs-->MGD	0.6463

Receiving Stream:

Default Hardness=	25
Default TSS=	10
99 Crit., 1=y, 0=n	1

Toxicity Dilution Series:

Biomonitoring dilution:	0.9744
Dilution Series Factor:	0.75

	Percent Effluent
Dilution No. 1	97.440%
Dilution No. 2	73.0800%
Dilution No. 3	54.8100%
Dilution No. 4	41.1075%
Dilution No. 5	30.8306%

Partition Coefficients; Dissolved-->Total

METALS	*FW*
Total Arsenic	1.769753
Total Cadmium	4.186421
Chromium III	4.79766
Chromium VI	1
Total Copper	2.638879
Total Lead	4.972753
Total Mercury	3.270097
Total Nickel	2.039569
Total Zinc	3.112566

Aquatic Life, Dissolved

Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	191.3141	3.501989
Chromium III	2134.174	692.3039
Chromium VI	15.712	10.582
Copper	87.9084	50.67243
Lead	370.3655	14.43261
Mercury	1.734	0.012
Nickel	5756.943	639.3547
Zinc	466.5013	425.9864

Site Specific Multiplier Values:

CV =	---
N =	---
WLAa --> LTAa	---
WLAc --> LTAc	---
LTA a,c-->WQBL avg	---
LTA a,c-->WQBL max	---
LTA h --> WQBL max	---

Developer: Bruce Fielding Time: 02:04 PM

Software: Lotus 4.0 LA0054828, AI742

Revision date: 12/13/02

Water Quality Screen for Chemical Waste Management

Input variables:

Receiving Water Characteristics:

Receiving Water Name=	Bayou Choupique
Critical flow (Qr) cfs=	0.1
Harm. mean/avg tidal cfs=	0.3
Drinking Water=1 HHNPCR=2	
Marine, 1=y, 0=n	0
Rec. Water Hardness=	525.08
Rec. Water TSS=	5.75
Fisch/Specific=1,Stream=0	0
Diffuser Ratio=	

Effluent Characteristics:

Permittee=	Chemical Waste Management
Permit Number=	LA0054828, AI742
Facility flow (Qef),MGD=	2.46
Outfall Number =	001
Eff. data, 2=lbs/day	1
MQL, 2=lbs/day	1
Effluent Hardness=	N/A
Effluent TSS=	N/A
WQBL ind. 0=y, 1=n	
Acute/Chr. ratio 0=n, 1=y	0
Aquatic,acute only1=y,0=n	

Page Numbering/Labeling

Appendix	Appendix B-1
Page Numbers 1=y, 0=n	1
Input Page # 1=y, 0=n	1

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3	
Pipe width, feet	
ZID plume dist., feet	
MZ plume dist., feet	
HHnc plume dist., feet	
HHc plume dist., feet	

Fischer/site specific dilutions:

F/specific ZID Dilution =	---
F/specific MZ Dilution =	---
F/specific HHnc Dilution=	---
F/specific HHc Dilution=	---

Dilution:

ZID Fs =	0.1
MZ Fs =	1
Critical Qr (MGD)=	0.06463
Harm. Mean (MGD)=	0.19389
ZID Dilution =	0.99738
MZ Dilution =	0.9744
HHnc Dilution=	0.9744
HHc Dilution=	0.926941
ZID Upstream =	0.002627
MZ Upstream =	0.026272
MZhhnc Upstream=	0.026272
MZhhc Upstream=	0.078817
ZID Hardness=	---
MZ Hardness=	---
ZID TSS=	---
MZ TSS=	---

Multipliers:

WLAa --> LTAa	0.32
WLAc --> LTAc	0.53
LTA a,c-->WQBL avg	1.31
LTA a,c-->WQBL max	3.11
LTA h --> WQBL max	2.38
WQBL-limit/report	2.13
WLA Fraction	1
WQBL Fraction	1

Conversions:

ug/L-->lbs/day Qef	0.020516
ug/L-->lbs/day Qeo	0
ug/L-->lbs/day Qr	0.000834
lbs/day-->ug/L Qeo	48.74149
lbs/day-->ug/L Qef	48.74149
diss-->tot 1=y0=n	1
Cu diss->tot1=y0=n	1
cfs-->MGD	0.6463

Receiving Stream:

Default Hardness=	25
Default TSS=	10
99 Crit., 1=y, 0=n	1

Toxicity Dilution Series:

Biomonitoring dilution:	0.9744
Dilution Series Factor:	0.75

	Percent Effluent
Dilution No. 1	97.440%
Dilution No. 2	73.0800%
Dilution No. 3	54.8100%
Dilution No. 4	41.1075%
Dilution No. 5	30.8306%

Partition Coefficients; Dissolved-->Total

METALS	FW
Total Arsenic	1.769753
Total Cadmium	4.186421
Chromium III	4.79766
Chromium VI	1
Total Copper	2.638879
Total Lead	4.972753
Total Mercury	3.270097
Total Nickel	2.039569
Total Zinc	3.112566

Aquatic Life, Dissolved Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	191.3141	3.501989
Chromium III	2134.174	692.3039
Chromium VI	15.712	10.582
Copper	87.9084	50.67243
Lead	370.3655	14.43261
Mercury	1.734	0.012
Nickel	5756.943	639.3547
Zinc	466.5013	425.9864

Site Specific Multiplier Values:

CV =	---
N =	---
WLAa --> LTAa	---
WLAc --> LTAc	---
LTA a,c-->WQBL avg	---
LTA a,c-->WQBL max	---
LTA h --> WQBL max	---

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic	CuEffluent	Effluent		MQLEffluent	95th %		Numerical Criteria			HH
Parameters	Instream	/Tech	/Tech	1=No 95%	estimate		Acute	Chronic	HHNDW	Carcinogen
	Conc.	(Avg)	(Max)	0=95 %	Non-Tech		FW	FW		Indicator
	ug/L	ug/L	ug/L	ug/L		ug/L	ug/L	ug/L	ug/L	"C"
NONCONVENTIONAL										
Total Phenols (4AAP)			50	5	0		700	350	50	
3-Chlorophenol				10						
4-Chlorophenol				10			383	192		
2,3-Dichlorophenol				10						
2,5-Dichlorophenol				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenocy-acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic			100	10	0		601.3622	265.463		
Total Cadmium			40	1	0		800.9214	14.6608		
Chromium III				10			10239.04	3321.439		
Chromium VI				10			15.712	10.582		
Total Copper			500	10	0		231.9797	133.7184		
Total Lead			140	5	0		1841.736	71.76983		
Total Mercury			10	0.2	0		5.670349	0.039241		
Total Nickel			210	40	0		11741.68	1304.008		
Total Zinc			686	20	0		1452.016	1325.911		
Total Cyanide			100	20	0		45.9	5.2	12844	
DIOXIN										
2,3,7,8 TCDD; dioxin			1.0E-005						7.2E-007	C
VOLATILE COMPOUNDS										
Benzene			44	10	0		2249	1125	12.5	C
Bromoform			100	10	0		2930	1465	34.7	C
Bromodichloromethane			100	10	0				3.3	C
Carbon Tetrachloride			28	10	0		2730	1365	1.2	C
Chloroform			16	10	0		2890	1445	70	C
Dibromochloromethane			100	10	0				5.08	C
1,2-Dichloroethane			19	10	0		11800	5900	6.8	C
1,1-Dichloroethylene			25	10	0		1160	580	0.58	C
1,3-Dichloropropylene			44	10	0		606	303	162.79	
Ethylbenzene			72	10	0		3200	1600	8100	
Methyl Chloride			100	50	0		55000	27500		
Methylene Chloride			89	20	0		19300	9650	87	C
1,1,2,2-Tetrachloro-ethane			100	10	0		932	466	1.8	C

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHNDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHNDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 001	(*20) WQBL Max 001	(*21) WQBL Avg 001	(*22) WQBL Max 001	(*23) Need WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	701.8391	359.1953	51.31362	224.5885	190.3735	51.31362	51.31362	51.31362	122.1264	1.052771	2.505594	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	384.0062	197.0443	---	122.882	104.4335	---	104.4335	136.8079	324.7881	2.806805	6.663483	no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,4-Dichlorophenocy-acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	---	no
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	---	no
METALS AND CYANIDE												
Total Arsenic	602.9421	272.4373	---	192.9415	144.3918	---	144.3918	189.1532	449.0585	3.880744	9.213063	no
Total Cadmium	803.0256	15.04598	---	256.9682	7.974367	---	7.974367	10.44642	24.80028	0.214323	0.508813	yes
Chromium III	10265.94	3408.701	---	3285.101	1806.611	---	1806.611	2366.661	5618.561	48.55536	115.2726	no
Chromium VI	15.75328	10.86001	---	5.041049	5.755807	---	5.041049	6.603775	15.67766	0.135486	0.321649	no
Total Copper	232.5891	137.2315	---	74.42852	72.73271	---	72.73271	95.27985	226.1987	1.9548	4.640784	yes
Total Lead	1846.575	73.65539	---	590.904	39.03736	---	39.03736	51.13894	121.4062	1.049187	2.490818	yes
Total Mercury	5.685246	0.040272	---	1.819279	0.021344	---	0.021344	0.027961	0.066381	0.000574	0.001362	yes
Total Nickel	11772.53	1338.267	---	3767.209	709.2816	---	709.2816	929.1589	2205.866	19.063	45.25643	no
Total Zinc	1455.831	1360.746	---	465.866	721.1953	---	465.866	610.2844	1448.843	12.52084	29.72504	no
Total Cyanide	46.02059	5.336616	13181.44	14.72659	2.828407	13181.44	2.828407	3.705213	8.796345	0.076018	0.180469	yes
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	7.8E-007	---	---	7.8E-007	7.8E-007	7.8E-007	0.000002	1.6E-008	3.8E-008	no
VOLATILE COMPOUNDS												
Benzene	2254.909	1154.556	13.48521	721.5708	611.9149	13.48521	13.48521	13.48521	32.09481	0.276668	0.65847	yes
Bromoform	2937.698	1503.489	37.43495	940.0633	796.8492	37.43495	37.43495	37.43495	89.09519	0.76803	1.827912	yes
Bromodichloromethane	---	---	3.560096	---	---	3.560096	3.560096	3.560096	8.473029	0.07304	0.173836	yes
Carbon Tetrachloride	2737.172	1400.862	1.29458	875.8952	742.4567	1.29458	1.29458	1.29458	3.081102	0.02656	0.063213	yes
Chloroform	2897.593	1482.964	75.5172	927.2297	785.9707	75.5172	75.5172	75.5172	179.7309	1.549341	3.687432	no
Dibromochloromethane	---	---	5.480391	---	---	5.480391	5.480391	5.480391	13.04333	0.112438	0.267602	yes
1,2-Dichloroethane	11831	6055.007	7.335956	3785.92	3209.154	7.335956	7.335956	7.335956	17.45958	0.150507	0.358208	yes
1,1-Dichloroethylene	1163.048	595.238	0.625714	372.1752	315.4761	0.625714	0.625714	0.625714	1.489199	0.012837	0.030553	yes
1,3-Dichloropropylene	607.5921	310.9605	167.0669	194.4295	164.8091	167.0669	164.8091	215.8999	512.5562	4.429489	10.51581	no
Ethylbenzene	3208.407	1642.036	8312.806	1026.69	870.279	8312.806	870.279	1140.065	2706.568	23.39004	55.52902	no
Methyl Chloride	55144.5	28222.49	---	17646.24	14957.92	---	14957.92	19594.87	46519.13	402.0163	954.4051	no
Methylene Chloride	19350.71	9903.528	93.85709	6192.226	5248.87	93.85709	93.85709	93.85709	223.3799	1.92561	4.582951	no
1,1,2,2-Tetrachloro-ethane	934.4486	478.2429	1.941871	299.0235	253.4687	1.941871	1.941871	1.941871	4.621652	0.03984	0.09482	yes

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) ug/L	(*4) Effluent /Tech (Max) ug/L	(*5) MQL ug/L	(*6) Effluent 95th % 1=No 95% 0=95 %	(*7) estimate Non-Tech ug/L	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHNDW ug/L	(*11) HH Carcinogen Indicator "C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene			41	10	0		1290	645	2.5	C
Toluene			60	10	0		1270	635	46200	
1,1,1-Trichloroethane			54	10	0		5280	2640		
1,1,2-Trichloroethane			54	10	0		1800	900	6.9	C
Trichloroethylene			19	10	0		3900	1950	21	C
Vinyl Chloride			100	10	0				35.8	C
ACID COMPOUNDS										
2-Chlorophenol			98	10	0		258	129	126.4	
2,4-Dichlorophenol			100	10	0		202	101	232.6	
BASE NEUTRAL COMPOUNDS										
Benzidine			100	50	0		250	125	0.00017	C
Hexachlorobenzene			19	10	0				0.00025	C
Hexachlorabutadiene			9	10	0		5.1	1.02	0.11	C
PESTICIDES										
Aldrin			10	0.05	0		3		0.0004	C
Hexachlorocyclohexane (gamma BHC, Lindane)			10	0.05	0		5.3	0.21	0.2	C
Chlordane			10	0.2	0		2.4	0.0043	0.00019	C
4,4'-DDT			10	0.1	0		1.1	0.001	0.00019	C
4,4'-DDE			10	0.1	0		52.5	10.5	0.00019	C
4,4'-DDD			10	0.1	0		0.03	0.006	0.00027	C
Dieldrin			10	0.1	0		0.2374	0.0557	0.00005	C
Endosulfan			10	0.1	0		0.22	0.056	0.64	
Endrin			5	0.1	0		0.0864	0.0375	0.26	
Heptachlor			10	0.05	0		0.52	0.0038	0.00007	C
Toxaphene			10	5	0		0.73	0.0002	0.00024	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							19	11		
Ammonia								4000		
Chlorides										
Sulfates										
TDS										
Goldbook Values:										

(*1) Toxic Parameters	(*12) WLAa Acute ug/L	(*13) WLAc Chronic ug/L	(*14) WLAh HHNDW ug/L	(*15) LTAa Acute ug/L	(*16) LTAc Chronic ug/L	(*17) LTAh HHNDW ug/L	(*18) Limiting A,C,HH ug/L	(*19) WQBL Avg 001 ug/L	(*20) WQBL Max 001 ug/L	(*21) WQBL Avg 001 lbs/day	(*22) WQBL MaxWQBL? 001 lbs/day	(*23) Need
Tetrachloroethylene	1293.389	661.9457	2.697043	413.8845	350.8312	2.697043	2.697043	2.697043	6.418962	0.055334	0.131694	yes
Toluene	1273.337	651.6829	47413.78	407.4677	345.392	47413.78	345.392	452.4635	1074.169	9.282922	22.03808	no
1,1,1-Trichloroethane	5293.872	2709.359	---	1694.039	1435.96	---	1435.96	1881.108	4465.836	38.59356	91.62289	no
1,1,2-Trichloroethane	1804.729	923.6451	7.443838	577.5133	489.5319	7.443838	7.443838	7.443838	17.71633	0.152721	0.363475	yes
Trichloroethylene	3910.246	2001.231	22.65516	1251.279	1060.652	22.65516	22.65516	22.65516	53.91928	0.464802	1.106229	no
Vinyl Chloride	---	---	38.62165	---	---	38.62165	38.62165	38.62165	91.91953	0.792377	1.885858	yes
ACID COMPOUNDS												
2-Chlorophenol	258.6778	132.3891	129.7208	82.7769	70.16624	129.7208	70.16624	91.91778	218.217	1.885822	4.477027	no
2,4-Dichlorophenol	202.5307	103.6535	238.711	64.80982	54.93636	238.711	54.93636	71.96663	170.8521	1.476496	3.50527	no
BASE NEUTRAL COMPOUNDS												
Benzidine	250.6568	128.284	0.000183	80.21018	67.99054	0.000183	0.000183	0.000183	0.000436	0.000004	0.000009	yes
Hexachlorobenzene	---	---	0.00027	---	---	0.00027	0.00027	0.00027	0.000642	0.000006	0.000013	yes
Hexachlorabutadiene	5.113399	1.046798	0.11867	1.636288	0.554803	0.11867	0.11867	0.11867	0.282434	0.002435	0.005795	yes
PESTICIDES												
Aldrin	3.007882	---	0.000432	0.962522	---	0.000432	0.000432	0.000432	0.001027	0.000009	0.000021	yes
Hexachlorocyclohexane (gamma BHC, Lindane)	5.313924	0.215517	0.215763	1.700456	0.114224	0.215763	0.114224	0.149634	0.355237	0.00307	0.007288	yes
Chlordane	2.406305	0.004413	0.000205	0.770018	0.002339	0.000205	0.000205	0.000205	0.000488	0.000004	0.00001	yes
4,4'-DDT	1.10289	0.001026	0.000205	0.352925	0.000544	0.000205	0.000205	0.000205	0.000488	0.000004	0.00001	yes
4,4'-DDE	52.63793	10.77586	0.000205	16.84414	5.711206	0.000205	0.000205	0.000205	0.000488	0.000004	0.00001	yes
4,4'-DDD	0.030079	0.006158	0.000291	0.009625	0.003264	0.000291	0.000291	0.000291	0.000693	0.000006	0.000014	yes
Dieldrin	0.238024	0.057163	0.000054	0.076168	0.030297	0.000054	0.000054	0.000054	0.000128	0.000001	0.000003	yes
Endosulfan	0.220578	0.057471	0.656814	0.070585	0.03046	0.656814	0.03046	0.039902	0.09473	0.000819	0.001944	yes
Endrin	0.086627	0.038485	0.266831	0.027721	0.020397	0.266831	0.020397	0.02672	0.063435	0.000548	0.001301	yes
Heptachlor	0.521366	0.0039	0.000076	0.166837	0.002067	0.000076	0.000076	0.000076	0.00018	0.000002	0.000004	yes
Toxaphene	0.731918	0.000205	0.000259	0.234214	0.000109	0.000259	0.000109	0.000143	0.000338	0.000003	0.000007	yes
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	19.04992	11.289	---	6.095974	5.983168	---	5.983168	7.83795	18.60765	0.160807	0.381762	no
Ammonia	---	4105.089	---	---	2175.697	---	2175.697	2850.164	6766.419	58.4751	138.8226	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

Developer: Bruce Fielding *Time: 03:05 PM*

Software: Lotus 4.0 LA0054828, AI742

Revision date: 12/13/02

Water Quality Screen for Chemical Waste Management

Input variables:

Receiving Water Characteristics:

Receiving Water Name=	Bayou Choupique
Critical flow (Qr) cfs=	0.1
Harm. mean/avg tidal cfs=	0.3
Drinking Water=1 HHNPCR=2	
Marine, 1=y, 0=n	*0*
Rec. Water Hardness=	525.08
Rec. Water TSS=	5.75
Fisch/Specific=1,Stream=0	0
Diffuser Ratio=	

Effluent Characteristics:

Permittee=	Chemical Waste Management
Permit Number=	LA0054828, AI742
Facility flow (Qef),MGD=	4.85
Outfall Number =	002
Eff. data, 2=lbs/day	1
MQL, 2=lbs/day	1
Effluent Hardness=	N/A
Effluent TSS=	N/A
WQBL ind. 0=y, 1=n	
Acute/Chr. ratio 0=n, 1=y	0
Aquatic,acute only1=y,0=n	
Page Numbering/Labeling	
Appendix	Appendix B-2
Page Numbers 1=y, 0=n	1
Input Page # 1=y, 0=n	1

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3	
Pipe width, feet	
ZID plume dist., feet	
MZ plume dist., feet	
HHnc plume dist., feet	
HHc plume dist., feet	

Fischer/site specific dilutions:

F/specific ZID Dilution =	---
F/specific MZ Dilution =	---
F/specific HHnc Dilution=	---
F/specific HHc Dilution=	---

Dilution:

ZID Fs =	0.1
MZ Fs =	1
Critical Qr (MGD)=	0.06463
Harm. Mean (MGD)=	0.19389
ZID Dilution =	*0.998669*
MZ Dilution =	0.986849
HHnc Dilution=	0.986849
HHc Dilution=	0.961559
ZID Upstream =	0.001333
MZ Upstream =	0.013326
MZhhnc Upstream=	0.013326
MZhhc Upstream=	0.039977
ZID Hardness=	---
MZ Hardness=	---
ZID TSS=	---
MZ TSS=	---

Multipliers:

WLAa --> LTAa	0.32
WLAc --> LTAc	0.53
LTA a,c-->WQBL avg	1.31
LTA a,c-->WQBL max	3.11
LTA h --> WQBL max	2.38
WQBL-limit/report	2.13
WLA Fraction	1
WQBL Fraction	1

Conversions:

ug/L-->lbs/day Qef	0.040449
ug/L-->lbs/day Qeo	0
ug/L-->lbs/day Qr	0.000834
lbs/day-->ug/L Qeo	24.72249
lbs/day-->ug/L Qef	24.72249
diss-->tot 1=y0=n	1
Cu diss->tot1=y0=n	1
cfs-->MGD	0.6463

Receiving Stream:

Default Hardness=	25
Default TSS=	10
99 Crit., 1=y, 0=n	1

Toxicity Dilution Series:

Biomonitoring dilution:	0.986849
Dilution Series Factor:	0.75

	Percent Effluent
Dilution No. 1	98.685%
Dilution No. 2	*74.0137%*
Dilution No. 3	55.5103%
Dilution No. 4	41.6327%
Dilution No. 5	31.2245%

Partition Coefficients; Dissolved-->Total

METALS	FW
Total Arsenic	1.769753
Total Cadmium	4.186421
Chromium III	4.79766
Chromium VI	1
Total Copper	2.638879
Total Lead	4.972753
Total Mercury	3.270097
Total Nickel	2.039569
Total Zinc	3.112566

Aquatic Life, Dissolved Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	191.3141	3.501989
Chromium III	2134.174	692.3039
Chromium VI	15.712	10.582
Copper	87.9084	50.67243
Lead	370.3655	14.43261
Mercury	1.734	0.012
Nickel	5756.943	639.3547
Zinc	466.5013	425.9864

Site Specific Multiplier Values:

CV =	---
N =	---
WLAa --> LTAa	---
WLAc --> LTAc	---
LTA a,c-->WQBL avg	---
LTA a,c-->WQBL max	---
LTA h --> WQBL max	---

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic	CuEffluent	Effluent		MQLEffluent	95th %		Numerical Criteria			HH
Parameters	Instream	/Tech	/Tech		1=No 95%	estimate	Acute	Chronic	HHNDW	Carcinogen
	Conc.	(Avg)	(Max)		0=95 %	Non-Tech	FW	FW		Indicator
	ug/L	ug/L	ug/L	ug/L		ug/L	ug/L	ug/L	ug/L	"C"
NONCONVENTIONAL										
Total Phenols (4AAP)			50	5	0		700	350	50	
3-Chlorophenol				10						
4-Chlorophenol				10			383	192		
2,3-Dichlorophenol				10						
2,5-Dichlorophenol				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenocy-acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic			61	10	0		601.3622	265.463		
Total Cadmium			17	1	0		800.9214	14.6608		
Chromium III				10			10239.04	3321.439		
Chromium VI				10			15.712	10.582		
Total Copper			4	10	0		231.9797	133.7184		
Total Lead			14	5	0		1841.736	71.76983		
Total Mercury			0.04	0.2	0		5.670349	0.039241		
Total Nickel			14	40	0		11741.68	1304.008		
Total Zinc			95	20	0		1452.016	1325.911		
Total Cyanide			100	20	0		45.9	5.2	12844	
DIOXIN										
2,3,7,8 TCDD; dioxin			1.0E-005						7.2E-007	C
VOLATILE COMPOUNDS										
Benzene			44	10	0		2249	1125	12.5	C
Bromoform			100	10	0		2930	1465	34.7	C
Bromodichloromethane			100	10	0				3.3	C
Carbon Tetrachloride			28	10	0		2730	1365	1.2	C
Chloroform			16	10	0		2890	1445	70	C
Dibromochloromethane			100	10	0				5.08	C
1,2-Dichloroethane			19	10	0		11800	5900	6.8	C
1,1-Dichloroethylene			25	10	0		1160	580	0.58	C
1,3-Dichloropropylene			44	10	0		606	303	162.79	
Ethylbenzene			72	10	0		3200	1600	8100	
Methyl Chloride			100	50	0		55000	27500		
Methylene Chloride			89	20	0		19300	9650	87	C
1,1,2,2-Tetrachloro-ethane			100	10	0		932	466	1.8	C

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHNDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHNDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 002	(*20) WQBL Max 002	(*21) WQBL Avg 002	(*22) WQBL Max 002	(*23) Need WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	700.9328	354.664	50.66629	224.2985	187.9719	50.66629	50.66629	50.66629	120.5858	2.049401	4.877574	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	383.5104	194.5585	---	122.7233	103.116	---	103.116	135.082	320.6909	5.463932	12.97162	no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,4-Dichlorophenocy-acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	---	no
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	---	no
METALS AND CYANIDE												
Total Arsenic	602.1635	269.0005	---	192.6923	142.5703	---	142.5703	186.767	443.3935	7.55454	17.93482	no
Total Cadmium	801.9887	14.85617	---	256.6364	7.873769	---	7.873769	10.31464	24.48742	0.417217	0.990492	no
Chromium III	10252.68	3365.699	---	3280.859	1783.821	---	1783.821	2336.805	5547.682	94.52143	224.3982	no
Chromium VI	15.73294	10.72301	---	5.03454	5.683197	---	5.03454	6.595247	15.65742	0.266771	0.633327	no
Total Copper	232.2888	135.5003	---	74.33242	71.81518	---	71.81518	94.07788	223.3452	3.805356	9.03409	no
Total Lead	1844.191	72.72621	---	590.141	38.54489	---	38.54489	50.49381	119.8746	2.042424	4.848809	no
Total Mercury	5.677905	0.039764	---	1.81693	0.021075	---	0.021075	0.027608	0.065543	0.001117	0.002651	no
Total Nickel	11757.33	1321.385	---	3762.345	700.3339	---	700.3339	917.4374	2178.038	37.10943	88.09948	no
Total Zinc	1453.951	1343.58	---	465.2644	712.0973	---	465.2644	609.4964	1446.972	24.65352	58.52858	no
Total Cyanide	45.96117	5.269294	13015.16	14.70757	2.792726	13015.16	2.792726	3.658471	8.685377	0.147981	0.351315	yes
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	7.5E-007	---	---	7.5E-007	7.5E-007	7.5E-007	0.000002	3E-008	7.2E-008	no
VOLATILE COMPOUNDS												
Benzene	2251.997	1139.991	12.99972	720.639	604.1955	12.99972	12.99972	12.99972	30.93933	0.525826	1.251465	yes
Bromoform	2933.904	1484.522	36.08721	938.8494	786.7968	36.08721	36.08721	36.08721	85.88757	1.459692	3.474066	yes
Bromodichloromethane	---	---	3.431925	---	---	3.431925	3.431925	3.431925	8.167982	0.138818	0.330387	yes
Carbon Tetrachloride	2733.638	1383.19	1.247973	874.7641	733.0905	1.247973	1.247973	1.247973	2.970175	0.050479	0.120141	yes
Chloroform	2893.851	1464.256	72.79841	926.0324	776.0555	72.79841	72.79841	72.79841	173.2602	2.944623	7.008203	no
Dibromochloromethane	---	---	5.283085	---	---	5.283085	5.283085	5.283085	12.57374	0.213695	0.508595	yes
1,2-Dichloroethane	11815.72	5978.622	7.071846	3781.032	3168.67	7.071846	7.071846	7.071846	16.83099	0.286049	0.680797	yes
1,1-Dichloroethylene	1161.546	587.7289	0.603187	371.6947	311.4963	0.603187	0.603187	0.603187	1.435585	0.024398	0.058068	yes
1,3-Dichloropropylene	606.8075	307.0377	164.9593	194.1784	162.73	164.9593	162.73	213.1763	506.0903	8.622767	20.47084	no
Ethylbenzene	3204.264	1621.321	8207.939	1025.365	859.3003	8207.939	859.3003	1125.683	2672.424	45.53277	108.0969	no
Methyl Chloride	55073.29	27866.46	---	17623.45	14769.22	---	14769.22	19347.68	45932.28	782.5944	1857.915	no
Methylene Chloride	19325.72	9778.594	90.47803	6184.23	5182.655	90.47803	90.47803	90.47803	215.3377	3.659746	8.710195	no
1,1,2,2-Tetrachloro-ethane	933.242	472.2098	1.871959	298.6374	250.2712	1.871959	1.871959	1.871959	4.455263	0.075719	0.180211	yes

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) ug/L	(*4) Effluent /Tech (Max) ug/L	(*5) MQL ug/L	(*6) 1=No 95% 0=95 %	(*7) Effluent 95th % estimate Non-Tech ug/L	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHNDW ug/L	(*11) HH Carcinogen Indicator "C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene			41	10	0		1290	645	2.5	C
Toluene			60	10	0		1270	635	46200	
1,1,1-Trichloroethane			54	10	0		5280	2640		
1,1,2-Trichloroethane			54	10	0		1800	900	6.9	C
Trichloroethylene			19	10	0		3900	1950	21	C
Vinyl Chloride			100	10	0				35.8	C
ACID COMPOUNDS										
2-Chlorophenol			98	10	0		258	129	126.4	
2,4-Dichlorophenol			100	10	0		202	101	232.6	
BASE NEUTRAL COMPOUNDS										
Benzidine			100	50	0		250	125	0.00017	C
Hexachlorobenzene			19	10	0				0.00025	C
Hexachlorabutadiene			9	10	0		5.1	1.02	0.11	C
PESTICIDES										
Aldrin			10	0.05	0		3		0.0004	C
Hexachlorocyclohexane (gamma BHC, Lindane)			10	0.05	0		5.3	0.21	0.2	C
Chlordane			10	0.2	0		2.4	0.0043	0.00019	C
4,4'-DDT			10	0.1	0		1.1	0.001	0.00019	C
4,4'-DDE			10	0.1	0		52.5	10.5	0.00019	C
4,4'-DDD			10	0.1	0		0.03	0.006	0.00027	C
Dieldrin			10	0.1	0		0.2374	0.0557	0.00005	C
Endosulfan			10	0.1	0		0.22	0.056	0.64	
Endrin			5	0.1	0		0.0864	0.0375	0.26	
Heptachlor			10	0.05	0		0.52	0.0038	0.00007	C
Toxaphene			10	5	0		0.73	0.0002	0.00024	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							19	11		
Ammonia								4000		
Chlorides										
Sulfates										
TDS										
Goldbook Values:										

[*1] TMDL Parameter

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHNDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHNDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 002	(*20) WQBL Max 002	(*21) WQBL Avg 002	(*22) WQBL Max 002	(*23) Need WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	1291.719	653.5951	2.599943	413.3501	346.4054	2.599943	2.599943	2.599943	6.187865	0.105165	0.250293	yes
Toluene	1271.692	643.4619	46815.65	406.9416	341.0348	46815.65	341.0348	446.7556	1060.618	18.07082	42.90095	no
1,1,1-Trichloroethane	5287.036	2675.18	---	1691.852	1417.845	---	1417.845	1857.378	4409.499	75.12906	178.3598	no
1,1,2-Trichloroethane	1802.399	911.9932	7.175844	576.7676	483.3564	7.175844	7.175844	7.175844	17.07851	0.290256	0.690809	yes
Trichloroethylene	3905.197	1975.985	21.83952	1249.663	1047.272	21.83952	21.83952	21.83952	51.97807	0.883387	2.102461	no
Vinyl Chloride	---	---	37.23119	---	---	37.23119	37.23119	37.23119	88.61023	1.505964	3.584195	yes
ACID COMPOUNDS												
2-Chlorophenol	258.3438	130.719	128.0844	82.67002	69.28108	128.0844	69.28108	90.75822	215.4642	3.671079	8.71531	no
2,4-Dichlorophenol	202.2692	102.3459	235.6996	64.72614	54.24333	235.6996	54.24333	71.05876	168.6968	2.874256	6.823615	no
BASE NEUTRAL COMPOUNDS												
Benzidine	250.3331	126.6657	0.000177	80.10661	67.13283	0.000177	0.000177	0.000177	0.000421	0.000007	0.000017	yes
Hexachlorobenzene	---	---	0.00026	---	---	0.00026	0.00026	0.00026	0.000619	0.000011	0.000025	yes
Hexachlorabutadiene	5.106796	1.033592	0.114398	1.634175	0.547804	0.114398	0.114398	0.114398	0.272266	0.004627	0.011013	yes
PESTICIDES												
Aldrin	3.003998	---	0.000416	0.961279	---	0.000416	0.000416	0.000416	0.00099	0.000017	0.00004	yes
Hexachlorocyclohexane (gamma BHC, Lindane)	5.307063	0.212798	0.207995	1.69826	0.112783	0.207995	0.112783	0.147746	0.350756	0.005976	0.014188	yes
Chlordane	2.403198	0.004357	0.000198	0.769023	0.002309	0.000198	0.000198	0.000198	0.00047	0.000008	0.000019	yes
4,4'-DDT	1.101466	0.001013	0.000198	0.352469	0.000537	0.000198	0.000198	0.000198	0.00047	0.000008	0.000019	yes
4,4'-DDE	52.56996	10.63992	0.000198	16.82239	5.639158	0.000198	0.000198	0.000198	0.00047	0.000008	0.000019	yes
4,4'-DDD	0.03004	0.00608	0.000281	0.009613	0.003222	0.000281	0.000281	0.000281	0.000668	0.000011	0.000027	yes
Dieldrin	0.237716	0.056442	0.000052	0.076069	0.029914	0.000052	0.000052	0.000052	0.000124	0.000002	0.000005	yes
Endosulfan	0.220293	0.056746	0.648528	0.070494	0.030076	0.648528	0.030076	0.039399	0.093535	0.001594	0.003783	yes
Endrin	0.086515	0.038	0.263465	0.027685	0.02014	0.263465	0.02014	0.026383	0.062635	0.001067	0.002534	yes
Heptachlor	0.520693	0.003851	0.000073	0.166622	0.002041	0.000073	0.000073	0.000073	0.000173	0.000003	0.000007	yes
Toxaphene	0.730973	0.000203	0.00025	0.233911	0.000107	0.00025	0.000107	0.000141	0.000334	0.000006	0.000014	yes
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	19.02532	11.14658	---	6.088102	5.907689	---	5.907689	7.739073	18.37291	0.313038	0.743166	no
Ammonia	---	4053.303	---	---	2148.251	---	2148.251	2814.208	6681.059	113.8319	270.2422	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

Developer: Bruce Fielding Time: 03:05 PM

Software: Lotus 4.0 LA0054828, AI742

Revision date: 12/13/02

Water Quality Screen for Chemical Waste Management

Input variables:

Receiving Water Characteristics:

Receiving Water Name=	Bayou Choupique
Critical flow (Qr) cfs=	0.1
Harm. mean/avg tidal cfs=	0.3
Drinking Water=1 HHNPCR=2	
Marine, 1=y, 0=n	0
Rec. Water Hardness=	525.08
Rec. Water TSS=	5.75
Fisch/Specific=1,Stream=0	0
Diffuser Ratio=	

Effluent Characteristics:

Permittee=	Chemical Waste Management
Permit Number=	LA0054828, AI742
Facility flow (Qef),MGD=	1.21
Outfall Number =	016
Eff. data, 2=lbs/day	1
MQL, 2=lbs/day	1
Effluent Hardness=	N/A
Effluent TSS=	N/A
WQBL ind. 0=y, 1=n	
Acute/Chr. ratio 0=n, 1=y	0
Aquatic,acute only1=y,0=n	

Page Numbering/Labeling

Appendix	Appendix B-3
Page Numbers 1=y, 0=n	1
Input Page # 1=y, 0=n	1

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3	
Pipe width, feet	
ZID plume dist., feet	
MZ plume dist., feet	
HHnc plume dist., feet	
HHc plume dist., feet	

Fischer/site specific dilutions:

F/specific ZID Dilution =	---
F/specific MZ Dilution =	---
F/specific HHnc Dilution=	---
F/specific HHc Dilution=	---

Dilution:

ZID Fs =	0.1
MZ Fs =	1
Critical Qr (MGD)=	0.06463
Harm. Mean (MGD)=	0.19389
ZID Dilution =	0.994687
MZ Dilution =	0.949295
HHnc Dilution=	0.949295
HHc Dilution=	0.861891
ZID Upstream =	0.005341
MZ Upstream =	0.053413
MZhhnc Upstream=	0.053413
MZhhc Upstream=	0.16024
ZID Hardness=	---
MZ Hardness=	---
ZID TSS=	---
MZ TSS=	---

Multipliers:

WLAa --> LTAa	0.32
WLAc --> LTAc	0.53
LTA a,c-->WQBL avg	1.31
LTA a,c-->WQBL max	3.11
LTA h --> WQBL max	2.38
WQBL-limit/report	2.13
WLA Fraction	1
WQBL Fraction	1

Conversions:

ug/L-->lbs/day Qef	0.010091
ug/L-->lbs/day Qeo	0
ug/L-->lbs/day Qr	0.000834
lbs/day-->ug/L Qeo	99.09428
lbs/day-->ug/L Qef	99.09428
diss-->tot 1=y0=n	1
Cu diss->tot1=y0=n	1
cfs-->MGD	0.6463

Receiving Stream:

Default Hardness=	25
Default TSS=	10
99 Crit., 1=y, 0=n	1

Toxicity Dilution Series:

Biomonitoring dilution:	0.949295
Dilution Series Factor:	0.75

	Percent Effluent
Dilution No. 1	94.930%
Dilution No. 2	71.1971%
Dilution No. 3	53.3978%
Dilution No. 4	40.0484%
Dilution No. 5	30.0363%

Partition Coefficients; Dissolved-->Total

METALS	FW
Total Arsenic	1.769753
Total Cadmium	4.186421
Chromium III	4.79766
Chromium VI	1
Total Copper	2.638879
Total Lead	4.972753
Total Mercury	3.270097
Total Nickel	2.039569
Total Zinc	3.112566

Aquatic Life, Dissolved Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	191.3141	3.501989
Chromium III	2134.174	692.3039
Chromium VI	15.712	10.582
Copper	87.9084	50.67243
Lead	370.3655	14.43261
Mercury	1.734	0.012
Nickel	5756.943	639.3547
Zinc	466.5013	425.9864

Site Specific Multiplier Values:

CV =	---
N =	---
WLAa --> LTAa	---
WLAc --> LTAc	---
LTA a,c-->WQBL avg	---
LTA a,c-->WQBL max	---
LTA h --> WQBL max	---

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) ug/L	(*4) Effluent /Tech (Max) ug/L	(*5) MQL ug/L	(*6) 1=No 95% 0=95 %	(*7) Effluent 95th % estimate Non-Tech ug/L	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHNDW ug/L	(*11) HH Carcinogen Indicator "C"
NONCONVENTIONAL										
Total Phenols (4AAP)			50	5	0		700	350	50	
3-Chlorophenol				10						
4-Chlorophenol				10			383	192		
2,3-Dichlorophenol				10						
2,5-Dichlorophenol				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenocy-acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic			61	10	0		601.3622	265.463		
Total Cadmium			17	1	0		800.9214	14.6608		
Chromium III				10			10239.04	3321.439		
Chromium VI				10			15.712	10.582		
Total Copper			4	10	0		231.9797	133.7184		
Total Lead			14	5	0		1841.736	71.76983		
Total Mercury			0.04	0.2	0		5.670349	0.039241		
Total Nickel			14	40	0		11741.68	1304.008		
Total Zinc			95	20	0		1452.016	1325.911		
Total Cyanide			100	20	0		45.9	5.2	12844	
DIOXIN										
2,3,7,8 TCDD; dioxin			1.0E-005						7.2E-007	C
VOLATILE COMPOUNDS										
Benzene			44	10	0		2249	1125	12.5	C
Bromoform			100	10	0		2930	1465	34.7	C
Bromodichloromethane			100	10	0				3.3	C
Carbon Tetrachloride			28	10	0		2730	1365	1.2	C
Chloroform			16	10	0		2890	1445	70	C
Dibromochloromethane			100	10	0				5.08	C
1,2-Dichloroethane			19	10	0		11800	5900	6.8	C
1,1-Dichloroethylene			25	10	0		1160	580	0.58	C
1,3-Dichloropropylene			44	10	0		606	303	162.79	
Ethylbenzene			72	10	0		3200	1600	8100	
Methyl Chloride			100	50	0		55000	27500		
Methylene Chloride			89	20	0		19300	9650	87	C
1,1,2,2-Tetrachloro-ethane			100	10	0		932	466	1.8	C

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHNDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHNDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 016	(*20) WQBL Max 016	(*21) WQBL Avg 016	(*22) WQBL MaxWQBL? 016	(*23) Need
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	703.7389	368.6946	52.67066	225.1965	195.4082	52.67066	52.67066	52.67066	125.3562	0.531521	1.265019	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	385.0457	202.2553	---	123.2146	107.1953	---	107.1953	140.4259	333.3775	1.417094	3.364245	no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,4-Dichlorophenocy-acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	---	no
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	---	no
METALS AND CYANIDE												
Total Arsenic	604.5742	279.6422	---	193.4638	148.2104	---	148.2104	194.1556	460.9343	1.959302	4.651472	no
Total Cadmium	805.1994	15.44388	---	257.6638	8.185258	---	8.185258	10.72269	25.45615	0.108207	0.256888	no
Chromium III	10293.73	3498.847	---	3293.993	1854.389	---	1854.389	2429.25	5767.15	24.51453	58.19862	no
Chromium VI	15.79592	11.14722	---	5.054695	5.908026	---	5.054695	6.621651	15.7201	0.066822	0.158638	no
Total Copper	233.2187	140.8608	---	74.63	74.65621	---	74.63	97.7653	232.0993	0.986589	2.342207	no
Total Lead	1851.574	75.60328	---	592.5036	40.06974	---	40.06974	52.49136	124.6169	0.529711	1.257559	no
Total Mercury	5.700636	0.041337	---	1.824204	0.021909	---	0.021909	0.0287	0.068136	0.00029	0.000688	no
Total Nickel	11804.4	1373.659	---	3777.407	728.0393	---	728.0393	953.7315	2264.202	9.624486	22.84897	no
Total Zinc	1459.772	1396.732	---	467.127	740.2681	---	467.127	611.9364	1452.765	6.175295	14.66043	no
Total Cyanide	46.14517	5.477749	13530.04	14.76645	2.903207	13530.04	2.903207	3.803201	9.028973	0.03838	0.091115	yes
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	8.4E-007	---	---	8.4E-007	8.4E-007	8.4E-007	0.000002	8.4E-009	2E-008	no
VOLATILE COMPOUNDS												
Benzene	2261.013	1185.09	14.503	723.524	628.0976	14.503	14.503	14.503	34.51713	0.146356	0.348326	yes
Bromoform	2945.65	1543.25	40.26032	942.608	817.9227	40.26032	40.26032	40.26032	95.81955	0.406283	0.966953	yes
Bromodichloromethane	---	---	3.828791	---	---	3.828791	3.828791	3.828791	9.112522	0.038638	0.091958	yes
Carbon Tetrachloride	2744.582	1437.909	1.392288	878.2662	762.0918	1.392288	1.392288	1.392288	3.313644	0.01405	0.033439	yes
Chloroform	2905.436	1522.182	81.21678	929.7397	806.7565	81.21678	81.21678	81.21678	193.2959	0.819591	1.950627	no
Dibromochloromethane	---	---	5.894018	---	---	5.894018	5.894018	5.894018	14.02776	0.059479	0.14156	yes
1,2-Dichloroethane	11863.03	6215.138	7.88963	3796.169	3294.023	7.88963	7.88963	7.88963	18.77732	0.079617	0.189489	yes
1,1-Dichloroethylene	1166.196	610.9797	0.672939	373.1827	323.8192	0.672939	0.672939	0.672939	1.601595	0.006791	0.016162	yes
1,3-Dichloropropylene	609.2368	319.1842	171.4851	194.9558	169.1676	171.4851	169.1676	221.6096	526.1113	2.236351	5.3092	no
Ethylbenzene	3217.092	1685.461	8532.647	1029.47	893.2944	8532.647	893.2944	1170.216	2778.146	11.80911	28.03538	no
Methyl Chloride	55293.77	28968.86	---	17694.01	15353.5	---	15353.5	20113.08	47749.38	202.9692	481.8581	no
Methylene Chloride	19403.09	10165.44	100.9409	6208.988	5387.682	100.9409	100.9409	100.9409	240.2392	1.018635	2.42435	no
1,1,2,2-Tetrachloro-ethane	936.9781	490.8906	2.088431	299.833	260.172	2.088431	2.088431	2.088431	4.970467	0.021075	0.050159	yes

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) ug/L	(*4) Effluent /Tech (Max) ug/L	(*5) MQL ug/L	(*6) Effluent 95th % 1=No 95% 0=95 %	(*7) estimate Non-Tech ug/L	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHNDW ug/L	(*11) HH Carcinogen Indicator "C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene			41	10	0		1290	645	2.5	C
Toluene			60	10	0		1270	635	46200	
1,1,1-Trichloroethane			54	10	0		5280	2640		
1,1,2-Trichloroethane			54	10	0		1800	900	6.9	C
Trichloroethylene			19	10	0		3900	1950	21	C
Vinyl Chloride			100	10	0				35.8	C
ACID COMPOUNDS										
2-Chlorophenol			98	10	0		258	129	126.4	
2,4-Dichlorophenol			100	10	0		202	101	232.6	
BASE NEUTRAL COMPOUNDS										
Benzidine			100	50	0		250	125	0.00017	C
Hexachlorobenzene			19	10	0				0.00025	C
Hexachlorabutadiene			9	10	0		5.1	1.02	0.11	C
PESTICIDES										
Aldrin			10	0.05	0		3		0.0004	C
Hexachlorocyclohexane (gamma BHC, Lindane)			10	0.05	0		5.3	0.21	0.2	C
Chlordane			10	0.2	0		2.4	0.0043	0.00019	C
4,4'-DDT			10	0.1	0		1.1	0.001	0.00019	C
4,4'-DDE			10	0.1	0		52.5	10.5	0.00019	C
4,4'-DDD			10	0.1	0		0.03	0.006	0.00027	C
Dieldrin			10	0.1	0		0.2374	0.0557	0.00005	C
Endosulfan			*10*	*0.1*	*0*		*0.22*	*0.056*	*0.64*	
Endrin			5	0.1	0		0.0864	0.0375	0.26	
Heptachlor			10	0.05	0		0.52	0.0038	0.00007	C
Toxaphene			10	5	0		0.73	0.0002	0.00024	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							19	11		
Ammonia								4000		
Chlorides										
Sulfates										
TDS										
Goldbook Values:										

[*1] TMDL Parameter

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHNDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHNDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 016	(*20) WQBL Max 016	(*21) WQBL Avg 016	(*22) WQBL Max 016	(*23) Need WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	1296.89	679.4515	2.900599	415.0049	360.1093	2.900599	2.900599	2.900599	6.903426	0.029271	0.069665	yes
Toluene	1276.783	668.9174	48667.69	408.5707	354.5262	48667.69	354.5262	464.4293	1102.577	4.686742	11.12654	no
1,1,1-Trichloroethane	5308.202	2781.011	---	1698.625	1473.936	---	1473.936	1930.856	4583.94	19.48504	46.25837	no
1,1,2-Trichloroethane	1809.614	948.0719	8.005654	579.0766	502.4781	8.005654	8.005654	8.005654	19.05346	0.080788	0.192276	yes
Trichloroethylene	3920.831	2054.156	24.36503	1254.666	1088.703	24.36503	24.36503	24.36503	57.98878	0.245877	0.585188	no
Vinyl Chloride	---	---	41.53658	---	---	41.53658	41.53658	41.53658	98.85706	0.419162	0.997606	yes
ACID COMPOUNDS												
2-Chlorophenol	259.3781	135.8903	133.1514	83.00098	72.02186	133.1514	72.02186	94.34864	223.988	0.95211	2.260352	no
2,4-Dichlorophenol	203.0789	106.3947	245.0239	64.98526	56.38921	245.0239	56.38921	73.86986	175.3704	0.74545	1.769733	no
BASE NEUTRAL COMPOUNDS												
Benzidine	251.3353	131.6767	0.000197	80.42731	69.78863	0.000197	0.000197	0.000197	0.000469	0.000002	0.000005	yes
Hexachlorobenzene	---	---	0.00029	---	---	0.00029	0.00029	0.00029	0.00069	0.000003	0.000007	yes
Hexachlorabutadiene	5.127241	1.074481	0.127626	1.640717	0.569475	0.127626	0.127626	0.127626	0.303751	0.001288	0.003065	yes
PESTICIDES												
Aldrin	3.016024	---	0.000464	0.965128	---	0.000464	0.000464	0.000464	0.001105	0.000005	0.000011	yes
Hexachlorocyclohexane (gamma BHC, Lindane)	5.328309	0.221217	0.232048	1.705059	0.117245	0.232048	0.117245	0.153591	0.364632	0.00155	0.00368	yes
Chlordane	2.412819	0.00453	0.00022	0.772102	0.002401	0.00022	0.00022	0.00022	0.000525	0.000002	0.000005	yes
4,4'-DDT	1.105875	0.001053	0.00022	0.35388	0.000558	0.00022	0.00022	0.00022	0.000525	0.000002	0.000005	yes
4,4'-DDE	52.78042	11.06084	0.00022	16.88973	5.862245	0.00022	0.00022	0.00022	0.000525	0.000002	0.000005	yes
4,4'-DDD	0.03016	0.00632	0.000313	0.009651	0.00335	0.000313	0.000313	0.000313	0.000746	0.000003	0.000008	yes
Dieldrin	0.238668	0.058675	0.000058	0.076374	0.031098	0.000058	0.000058	0.000058	0.000138	5.9E-007	0.000001	yes
Endosulfan	0.221175	0.058991	0.674184	0.070776	0.031265	0.674184	0.031265	0.040958		0.000413	0.000981	yes
Endrin	0.086861	0.039503	0.273887	0.027796	0.020937	0.273887	0.020937	0.027427	0.065113	0.000277	0.000657	yes
Heptachlor	0.522777	0.004003	0.000081	0.167289	0.002122	0.000081	0.000081	0.000081	0.000193	8.2E-007	0.000002	yes
Toxaphene	0.733899	0.000211	0.000278	0.234848	0.000112	0.000278	0.000112	0.000146	0.000347	0.000001	0.000004	yes
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	19.10149	11.58755	---	6.112475	6.141399	---	6.112475	8.007343	19.0098	0.080805	0.191835	no
Ammonia	---	4213.653	---	---	2233.236	---	2233.236	2925.539	6945.364	29.52279	70.08845	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

APPENDIX B-4 LA0054828, AI No. 742

Documentation and Explanation of Water Quality Screen
and Associated Lotus Spreadsheet

Each reference column is marked by a set of parentheses enclosing a number and asterisk, for example (*1) or (*19). These columns represent inputs, existing data sets, calculation points, and results for determining Water Quality Based Limits for an effluent of concern. The following represents a summary of information used in calculating the water quality screen:

Receiving Water Characteristics:

Receiving Water: Bayou Choupique via local drainage
Critical Flow, Qrc (cfs): 0.1
Harmonic Mean Flow, Qrh (cfs): 0.3
Segment No.: 031001
Receiving Stream Hardness (mg/L): 525.08
Receiving Stream TSS (mg/L): 5.75
MZ Stream Factor, Fs: N/A
Plume distance, Pf: N/A

Effluent Characteristics:

Company: Chemical Waste Management, Inc.
Facility flow, Qe (MGD): Outfall 001: 2.46
Outfall 002: 4.85
Outfall 003: 1.21
Effluent Hardness: N/A
Effluent TSS: N/A
Pipe/canal width, Pw: N/A
Permit Number: LA0054828

Variable Definition:
Qrc, critical flow of receiving stream, cfs
Qrh, harmonic mean flow of the receiving stream, cfs
Pf = Allowable plume distance in feet, specified in LAC 33.IX.1115.D
Pw = Pipe width or canal width in feet
Qe, total facility flow , MGD
Fs, stream factor from LAC.IX.33.11 (1 for harmonic mean flow)
Cu, ambient concentration, ug/L
Cr, numerical criteria from LAC.IX.1113, Table 1
WLA, wasteload allocation
LTA, long term average calculations
WQBL, effluent water quality based limit
ZID, Zone of Initial Dilution in % effluent
MZ, Mixing Zone in % effluent

Formulas used in aquatic life water quality screen (dilution type WLA):

Streams:

$$\text{Dilution Factor} = \frac{Qe}{(Qrc \times 0.6463 \times Fs + Qe)}$$

$$WLA\ a,c,h = \frac{Cr}{\text{Dilution Factor}} - \frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$$

Static water bodies (in the absence of a site specific dilution):

Discharge from a pipe:

$$\text{Critical Dilution} = \frac{(2.8)\ Pw\ \pi^{1/2}}{Pf}$$

$$WLA = \frac{(Cr-Cu)\ Pf}{(2.8)\ Pw\ \pi^{1/2}}$$

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.38)(Pw^{1/2})}{(Pf)^{1/2}}$$

$$WLA = \frac{(Cr-Cu)\ Pf^{1/2}}{2.38\ Pw^{1/2}}$$

Formulas used in human health water quality screen, human health non-carcinogens (dilution type WLA):

Streams:

$$\text{Dilution Factor} = \frac{Qe}{(Qrc \times 0.6463 + Qe)}$$

$$WLA\ a,c,h = \frac{Cr}{\text{Dilution Factor}} - \frac{(Qrc \times 0.6463 \times Cu)}{Qe}$$

Formulas used in human health water quality screen, human health carcinogens (dilution type WLA):

$$\text{Dilution Factor} = \frac{Qe}{(Qrh \times 0.6463 + Qe)}$$

$$WLA\ a,c,h = \frac{Cr}{\text{Dilution Factor}} - \frac{(Qrh \times 0.6463 \times Cu)}{Qe}$$

Static water bodies in the absence of a site specific dilution (human health carcinogens and human health non-carcinogens):

Discharge from a pipe:

$$\text{Critical Dilution} = \frac{(2.8)\ Pw\ \pi^{1/2}}{Pf}$$

$$WLA = \frac{(Cr-Cu)\ Pf^{*}}{(2.8)\ Pw\ \pi^{1/2}}$$

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.38)(Pw^{1/2})}{(Pf)^{1/2}}$$

$$WLA = \frac{(Cr-Cu)\ Pf^{1/2*}}{2.38\ Pw^{1/2}}$$

* Pf is set equal to the mixing zone distance specified in LAC 33:IX.1115 for the static water body type, i.e., lake, estuary, Gulf of Mexico, etc.

If a site specific dilution is used, WLA are calculated by subtracting Cu from Cr and dividing by the site specific dilution for human health and aquatic life criteria.

$$WLA = \frac{(Cr-Cu)}{\text{site specific dilution}}$$

Longterm Average Calculations:
LTAa = WLAa X 0.32
LTAc = WLAc X 0.53
LTAh = WLAh

WQBL Calculations:
Select most limiting LTA to calculate daily max and monthly avg WQBL

If aquatic life LTA is more limiting:
Daily Maximum = Min(LTAa, LTAc) X 3.11
Monthly Average = Min(LTAc, LTAc) X 1.31

If human health LTA is more limiting:
Daily Maximum = LTAh X 2.38
Monthly Average = LTAh

Mass Balance Formulas:

mass (lbs/day): (ug/L) X 1/1000 X (flow, MGD) X 8.34 = lbs/day

$$\text{concentration(ug/L)}: \frac{\text{lbs/day}}{\text{(flow, MGD) X 8.34 X 1/1000}} = \text{ug/L}$$

The following is an explanation of the references in the spreadsheet.

(*1) Parameter being screened.
(*2) Instream concentration for the parameter being screened in ug/L. In the absence of accurate supporting data, the instream concentration is assumed to be zero (0).
(*3) Monthly average effluent or technolgy value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
(*4) Daily maximum technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
(*5) Minimum analytical Quantification Levels (MQL's). Established in a letter dated January 27, 1994 from Wren Stenger of EPA Region 6 to Kilren Vidrine of LDEQ and from the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". The applicant must test for the parameter at a level at least as sensitive as the specified MQL. If this is not done, the MQL becomes the application value for screening purposes if the pollutant is suspected to be present

on-site and/or in the waste stream. Units are in ug/l or lbs/day depending on the units of the effluent data.

(*6) States whether effluent data is based on 95th percentile estimation. A "1" indicates that a 95th percentile approximation is being used, a "0" indicates that no 95th percentile approximation is being used.

(*7) 95th percentile approximation multiplier (2.13). The constant, 2.13, was established in memorandum of understanding dated October 8, 1991 from Jack Ferguson of Region 6 to Jesse Chang of LDEQ and included in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". This value is screened against effluent Water Quality Based Limits established in columns (*18) - (*21). Units are in ug/l or lbs/day depending on the units of the measured effluent data.

(*8) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, acute criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness Dependent Criteria:

Metal	Formula
Cadmium	$e^{(1.1280[\ln(\text{hardness})] - 1.6774)}$
Chromium III	$e^{(0.8190[\ln(\text{hardness})] + 3.6880)}$
Copper	$e^{(0.9422[\ln(\text{hardness})] - 1.3884)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 1.4600)}$
Nickel	$e^{(0.8460[\ln(\text{hardness})] + 3.3612)}$
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.8604)}$

Dissolved to Total Metal Multipliers for Freshwater Streams (TSS dependent):

Metal	Multiplier
Arsenic	$1 + 0.48 \times TSS^{-0.73} \times TSS$
Cadmium	$1 + 4.00 \times TSS^{-1.13} \times TSS$
Chromium III	$1 + 3.36 \times TSS^{-0.93} \times TSS$
Copper	$1 + 1.04 \times TSS^{-0.74} \times TSS$
Lead	$1 + 2.80 \times TSS^{-0.80} \times TSS$
Mercury	$1 + 2.90 \times TSS^{-1.14} \times TSS$
Nickel	$1 + 0.49 \times TSS^{-0.57} \times TSS$
Zinc	$1 + 1.25 \times TSS^{-0.70} \times TSS$

Dissolved to Total Metal Multipliers for Marine Environments (TSS dependent):

Metal	Multiplier

Copper	$1 + (10^{4.86} \times TSS^{-0.72} \times TSS) \times 10^{-6}$
Lead	$1 + (10^{6.06} \times TSS^{-0.85} \times TSS) \times 10^{-6}$
Zinc	$1 + (10^{5.36} \times TSS^{-0.52} \times TSS) \times 10^{-6}$

If a metal does not have multiplier listed above, then the dissolved to total metal multiplier shall be 1.

(*9) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, chronic criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.
Hardness dependent criteria:

Metal	Formula
Cadmium	$e^{(0.7852[\ln(hardness)] - 3.4900)}$
Chromium III	$e^{(0.8473[\ln(hardness)] + 0.7614)}$
Copper	$e^{(0.8545[\ln(hardness)] - 1.3860)}$
Lead	$e^{(1.2730[\ln(hardness)] - 4.7050)}$
Nickel	$e^{(0.8460[\ln(hardness)] + 1.1645)}$
Zinc	$e^{(0.8473[\ln(hardness)] + 0.7614)}$

Dissolved to total metal multiplier formulas are the same as (*8), acute numerical criteria for aquatic life protection.

(*10) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, human health protection, drinking water supply (HHDW), non-drinking water supply criteria (HHNDW), or human health non-primarry contact recreation (HHNPCR) (whichever is applicable). A DEQ and EPA approved Use Attainability Analysis is required before HHNPCR is used, e.g., Monte Sano Bayou. Units are specified.

(*11) C if screened and carcinogenic. If a parameter is being screened and is carcinogenic a "C" will appear in this column.

(*12) Wasteload Allocation for acute aquatic criteria (WLAa). Dilution type WLAa is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the acute aquatic numerical criteria for that parameter. Units are in ug/L.
Dilution WLAa formulas for streams:

$$WLAa = (Cr/\text{Dilution Factor}) - \frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAa formulas for static water bodies:
WLAa = (Cr-Cu)/Dilution Factor)
Cr represents aquatic acute numerical criteria from column (*8).
If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*13) Wasteload Allocation for chronic aquatic criteria (WLAc). Dilution type WLAc is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the chronic aquatic numerical criteria for that parameter. Units are in ug/L.
Dilution WLAc formula:

$$WLAc = (Cr/\text{Dilution Factor}) - \frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAc formulas for static water bodies:
WLAc = (Cr-Cu)/Dilution Factor)
Cr represents aquatic chronic numerical criteria from column (*9).
If Cu data is unavailable or inadequate, assume Cu=0.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*14) Wasteload Allocation for human health criteria (WLAh). Dilution type WLAh is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the human health numerical criteria for that parameter. Units are in ug/L. Dilution WLAh formula:

$$WLAh = (Cr/\text{Dilution Factor}) - \frac{(Fs \times Qrc,Qrh \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAh formulas for static water bodies:
WLAh = (Cr-Cu)/Dilution Factor)
Cr represents human health numerical criteria from column (*10).
If Cu data is unavailable or inadequate, assume Cu=0.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*15) Long Term Average for aquatic numerical criteria (LTAa). WLAa numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.32. WLAa X 0.32 = LTAa.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*16) Long Term Average for chronic numerical criteria (LTAc). WLAc numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.53. WLAc X 0.53 = LTAc.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*17) Long Term Average for human health numerical criteria (LTAh). WLAh numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 1. WLAc X 1 = LTAh.
If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*18) Limiting Acute, Chronic or Human Health LTA's. The most limiting LTA is placed in this column. Units are consistent with the WLA calculation. If standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then the type of limit, Aquatic or Human Health (HH), is indicated.

(*19) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 1.31 to determine the average WQBL ($LTA_{limiting\ aquatic}$ X 1.31 = $WQBL_{monthly\ average}$). If human health criteria was the most limiting criteria then LTAh = $WQBL_{monthly\ average}$. If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the chronic aquatic life criteria shall appear in this column depending on which is more limiting.

(*20) End of pipe Water Quality Based Limit (WQBL) daily maxium in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 3.11 to determine the daily maximum WQBL ($LTA_{limiting\ aquatic}$ X 3.11 = $WQBL_{daily\ max}$). If human health criteria was the most limiting criteria then LTAh is multiplied by 2.38 to determine the daily maximum WQBL ($LTA_{limiting\ aquatic}$ X 2.38 = $WQBL_{daily\ max}$). If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the acute aquatic life criteria shall appear in this column depending on which is more limiting.

(*21) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. The mass limit is determined by using the mass balance equations above. Monthly average WQBL, ug/l/1000 X facility flow, MGD X 8.34 = monthly average WQBL, lbs/day.

(*22) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. Mass limit is determined by using the mass balance equations above. Daily maximum WQBL, ug/l/1000 X facility flow, MGD X 8.34 = daily maximum WQBL, lbs/day.

(*23) Indicates whether the screened effluent value(s) need water quality based limits for the parameter of concern. A "yes" indicates that a water quality based limit is needed in the permit; a "no" indicates the reverse.